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THE PROBLEM OF THE CHRONIC CRIPPLE

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NEW YORK

The increasing interest throughout the country in the problem of the chronic cripple creates an opportunity for this section to be of great service in shaping the future development of work for this class of sufferers. As knowledge of the fact that there are large numbers of people in every community who need orthopedic care increases, and as methods of treatment are perfected, a large number of men are going to select orthopedic surgery as a specialty, and will seek opportunities to equip themselves for this work. It seems to me that we of this section should be able to furnish some suggestions to such men in determining the nature of their equipment, and the best means of applying it to the needs of the cripple. In answering such questions, the fact must be emphasized that almost all our work in orthopedic surgery has to do with the treatment of the chronic sufferer, which means that our results are long delayed, often requiring years of painstaking care to detail for their accomplishment, and may be secured only by men giving the same enthusiastic consideration to the treatment of these patients which is so easily given to the treatment of the acutely ill. In other words, we have got in some way to keep ourselves working under the inspiration of a chronic enthusiasm as the only means by which we can meet the tremendous difficulties in the treatment of chronic diseases. Not only is such enthusiasm important on the part of the surgeon, but also it is of immense importance in its influence on our patients. If it is tiresome and discouraging to the surgeon to find results long delayed, how much more so is it apt to be to the patients themselves.

Such enthusiasm is of slow growth, and suggests that the orthopedic surgeon as compared with the general surgeon should have a longer period of preliminary preparation. Not only is this necessary for the development of a spirit of enthusiasm but also is it best for technical equipment.

As has been indicated, the results of our methods of treatment are slow in showing, and a thorough knowledge of them cannot be obtained except by studying the individual case for a considerable time in varying conditions of treatment, in the hospital, dispensary and home. The great volume of work for the cripple is done in the outpatient or dispensary department, and careful training in this work is as necessary as in the hospital. A large number never have any hospital treatment at all, and those who are admitted to the hospital stay for a short time in comparison with the duration of treatment, and under modern conditions, except in the case of country hospitals for joint tuberculosis, most orthopedic patients are admitted to the hospital for some form of operative treatment. During the past year I have made inquiries of seven clinics in various parts of the country as to the total number of patients treated in each clinic and what proportion of that number were admitted to the hospital for operation. The results of these inquiries have been most surprising, because in the larger clinics, and those which have been longer established, the percentage of patients admitted to the hospital for operation of the total number treated in the dispensary varied from 3 to 10 per cent. In a few instances, the percentage was as high as 18. The average percentage for the whole number was 10.

These facts have an important bearing on the question we are discussing. If the man's training is only in the hospital, his preparation for the treatment of the 90 per cent of the cases which never enter the hospital is poor. There is a great deal more written about the 10 per cent who have operations than the 90 per cent who do not, and I think therein lies a danger to the future development of our specialty, that in the consideration given to the operative side of the work, we may neglect the nonoperative. I am not attempting to raise any question as to the value of operations in orthopedic surgery. There can no longer be any question that the operative aspect of our work is of great importance. All I am concerned about is that the vastly larger volume, the nonoperative, be not neglected. As a matter of fact, the greatest possible operative skill will be defeated in the accomplishment of the greatest amount of good for our patients, unless the man who exercises it has taken pains long before to perfect his equipment in the much more difficult and much more tedious nonoperative work.

Assuming, therefore, the proper training of the man, our second question is, What is the best means of applying it to the needs of the cripple?

This brings us to the question of organization, and I feel sure that from the standpoint of the cripple and his needs, the orthopedic surgeon can be more effective in meeting them in institutions wholly devoted to the treatment of the cripple. There are many communities throughout the country where such work is new and unfamiliar to the profession and the laity, and such places offer wonderful opportunities for men to initiate organizations ideally fitted to the need of the cripple,

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* Chairman's address read before the Section on Orthopedic Surgery at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916.

unhampered by the difficulties of attempting to do work for the cripple in a small and insignificant orthopedic department in a general hospital, the spirit and atmosphere of which I do not believe is most helpful to work of this kind

130 East Thirty-Sixth Street

TREATMENT OF CONSTIPATION

BY CONSERVATIVE SURGICAL CORRECTION OF RETARDATIVE DISPLACEMENTS OF THE COLON *

CHARLES A L REED, M D
CINCINNATI

It is no longer necessary even to affirm that constipation due to displacements, distortions or malformations of the intestines is frequently the cause of various forms of persistent ill health The demonstration, clinical and pathologic, has been made so frequently and so conclusively that the relationship has become accepted as axiomatic and fundamental It is no longer a matter of surprise when a progressive practitioner states that constipation is the underlying cause of successively systemic infection, toxemia, acidosis and terminal edemas This new point of view has come to be accepted by the profession as explanatory of many chronic headaches, neuralgias and rheumatisms, of many anemias and neurasthenias, of many digestive troubles, including ulcer of the stomach, of various disorders of the secretory organs, such as Bright's disease and cirrhosis — conditions heretofore recognized as separate diseases but now known to be correlated results of a common origin, or, in other words, the effects of toxic or infectious states often originating in constipation It is also now recognized that constipation has a contributing causal relation not only to these conditions, but to any or all so-called diseases, the inception or progress of which may be deleteriously influenced by general infection, or by toxemia with resulting acidosis It is also recognized, thanks to the pioneer work of Bouchard, Glenard and Lane, that logical treatment of these conditions must begin with the correction of the initial anatomic disturbance

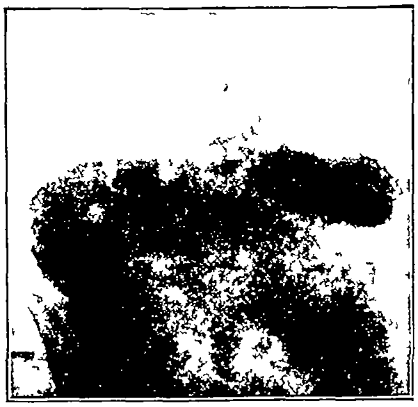
Fig 1 —Residual barium in stomach after twenty four hours visible duodenum ileac stasis coloptosis

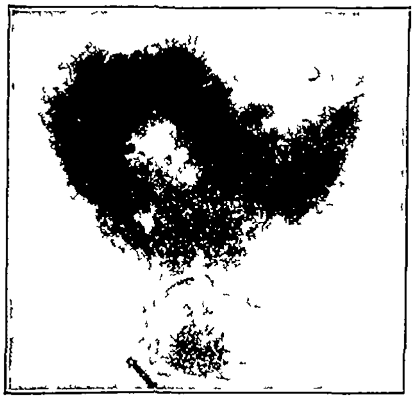
Fig 2 —Marked coloptosis with ileac and colonic stasis shown forty hours after ingestion

ANATOMIC CAUSES OF CONSTIPATION

As I have stated in previous publications, I have found, chief among causes of constipation, ptosis with retardative angulations of the colon, large, flabby and mobile cecum, dilated ascending colon, atrophied transverse colon, redundant transverse colon, retardative angulation at the splenic flexure, retardative angulation with or without adhesion at or near the terminal ileum, and redundancy with or without adhesions of the sigmoid Each of these conditions, whether coexisting with other of the conditions enumerated or not, is organic, each is associated with tissue or structural change Each condition must, therefore, find ultimate correction by physical means

TREATMENT OF MECHANICAL STASIS

Hygienic and Medicinal—There may be mechanical distortions of the alimentary canal which, because of their limited extent or because of the nonobstructive character of the resulting angulations, do not cause serious disturbance of function These are the cases which, because of the limited extent and slight character of the distortion, produce less severe consequences —consequences that may be susceptible of temporary relief by hygienic and medicinal means These, however, are not the cases that are referred to the surgeon, at least until after the temporizing means shall have failed to arrest the progress of the invalidism They are not, therefore, the cases that are here under consideration The cases that are here considered are those in which there is a demonstrated physical impediment to the fecal current, as shown by Roentgen-ray transit studies, and in which there is a demonstrated relation between the intestinal condition and the constitutional state and, finally, in which previous hygienic and medical treatment has failed either to bring relief or to arrest the progress of the invalidism

I make this last remark largely in deference to the mistaken notion that it is always better to try everything else before trying surgery, and I say it in recognition of the fact that the day will come when a condition that is obviously surgical from the start will be given the benefit of surgical treatment before the health has become profoundly and dangerously impaired by dalliance with a futile therapy

Surgical—The central idea in surgical treatment of mechanical stasis is, as far as possible, to restore or reestablish the physiologic drainage of the intestines It may not always be possible to accomplish this purpose for the reason that established pathologic conditions may be of such character as to make impossible the restoration of even a functional equivalent of the *status quo ante* A cecum that has become dilated, flabby and hypermobile by distention due to retardative angulation at the hepatic flexure, a transverse colon that has become atrophied by prolonged enervation due chiefly to purgation, a mucous membrane of either the large or small bowel that has become the seat of deep interstitial and follicular infection, as in some cases of epilepsy, and a marked redundancy of any portion of either the colon or the sigmoid are examples of pathologic change that defy functional restoration

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

On the other hand, there are cases, for example, in which an angulating ptosis may occur in an otherwise fairly normal intestine, or in which a prolonged wasting catharsis has left at least some of the muscularis, or, in short, in which there is an apparent possibility of functional restoration It is obvious that these two classes of cases present very different surgical problems Thus, the hopelessly played-out, flabby and infected cecum, or the equally atrophic and infected colon ought, under favoring conditions, to be removed, while either or both of these structures, when obviously susceptible of restoration, ought to be given the benefit of helpfully reparative treatment

It is considerations such as these that have resulted in the development of two classes of operations as follows

(*a*) Radical measures, such as excision of the cecum, resection of the transverse colon, resection of the sigmoid, colectomy and the various short-circuiting operations

(*b*) Conservative measures, such as the plication of the mesocolon, fixation of the sigmoid, gastropexy and omentopexy

It is not my purpose to discuss the radical operations The so-called conservative operations to which I have alluded, especially as they have ordinarily been done, have very generally fallen into disuse and, therefore, require no discussion The fact remains, however, that there is a rational demand for some conservative procedure to assist in the functional restoration of the affected bowel

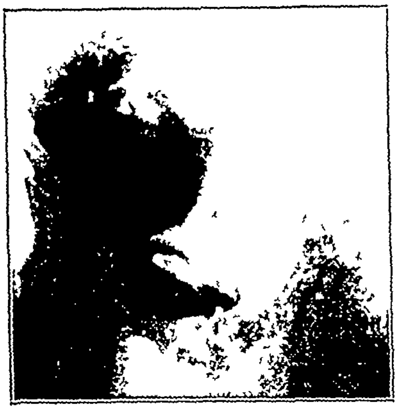

Fig 3 —Retardative angulation at hepatic flexure with adhesions between proximal surfaces in each curve of letter S Ileac stasis marked Exposure twenty four hours after ingestion

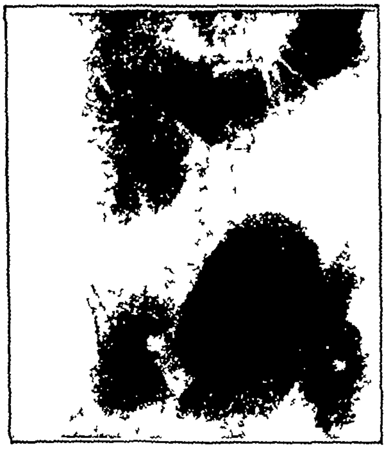

Fig 4 —Redundance of the cecum (double cecum) and redundant sigmoid not remediable by parietal implantation of colon

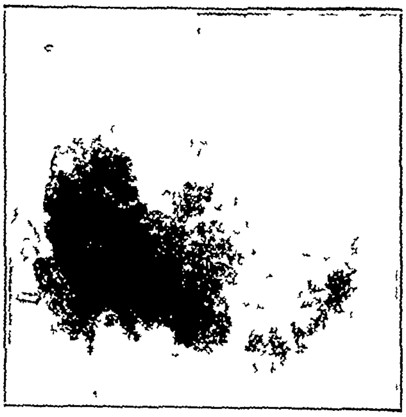

Fig 5 —Extreme coloptosis with ileac stasis thirty hours after ingestion

PARIETAL IMPLANTATION OF THE COLON

It was for the purpose of meeting the clinical demand for some such procedure that I several years ago devised the operation for parietal implantation of the colon The object of this operation was, as nearly as possible, to restore the ptotic colon and stomach to their normal position, and to keep them there indefinitely In this way, it was intended to break up possible adhesions, overcome the retardative angulations, relieve the mechanical disturbance of the whole splanchnic circulation, give freedom to the peristaltic activity and thus drain away the toxic and infectious content of the tract It was hoped to accomplish these purposes without sacrificial operation on any p[illegible] intestines, while at the same time effecting a [illegible] and stomach s[illegible]o the properitoneal structures that w[illegible] lead to serious [illegible]maximum of permanency

The essential steps of the procedure are as follows

A Lower Zone of the Abdomen

1 Make a median incision from near the umbilicus to near the pubes [This incision, closed, is shown only in Figure 7]

2 Explore the viscera, preferably in the following order (*a*) cecum (*b*) appendix, (*c*) first 12 inches of the terminal ileum, (*d*) ascending and transverse colon, (*e*) stomach, (*f*) sigmoid, (*g*) proximal intestinal surfaces, (*h*) pelvic viscera

3 Break up any adhesions that may be found

4 As far as possible, correct all peritoneal abrasions that may have been made by adhesions, giving particular attention to those, the correction of which may have resulted in exposure of the muscularis of the intestines

5 Approximate the peritoneal margins and hold them together with hemostatic forceps until all work in the upper zone of the abdomen has been finished

6 After completing all interference in the upper zone, close the lower incision by laminated chromic gut sutures, fortified with a few interrupted silkworm-gut sutures

7 If there have been adhesions, particularly if numerous or extensive, put a liter of hypertonic salt solution into the peritoneal cavity just before completing closure by suture of the lower incision

B Upper Zone of the Abdomen

1 Make an incision transversely across the intercostal interval about three-fourths inch below the tip of the ensiform cartilage, extending the same incision at an obtuse angle downward and to the right about a half inch below the costal margin for a distance of from 5 to 6 inches (Fig 6)

2 The incision just indicated divides (*a*) the integument (*b*) subcutaneous fat, (*c*) superficial fascia (*d*) inner half of the left rectus, (*e*) all of the right rectus, and (*f*) the inner margins of the external oblique, internal oblique and the transversalis muscles, and finally, (*g*) the transversalis fascia through the entire length of the incision, care being taken not to extend the incision along this line through the peritoneum

3 Begin at the epigastric fat and dissect the peritoneum away from the transversalis fascia for a distance of three-quarters inch along the whole length of the incision (Fig 6)

4 Evert the lower flap by seizing the transverse fascia at several points with deep bites of hemostatic forceps (Fig 6)

5 Divide the peritoneum and the ligamentum teres along the lower line of denudation and bring the ligamentum teres out through a puncture at the base of the peritoneal flap (Fig 8)

6 Explore the upper zone particularly with reference to (*a*) the stomach (*b*) duodenum, giving special attention to frequent enveloping exudate (*c*) gallbladder (*d*) pancreas

7 Put the patient in the Trendelenburg position bringing the transverse colon and omentum out through the incision

8 Stitch the omentum to the denuded transversalis fascia by stitching the base of the former by its external surface to the lower margin of the denuded surface of the latter, employing a continuous-interrupted suture, and exercising care to avoid wounding or constricting important omental vessels (Fig 8)

9 Close the wound by the following steps (*a*) Stitch the margin of the upper peritoneal flap to the under surface of the transversalis fascia (*b*) Approximate the divided ends of the muscles by continuous-interrupted sutures of chromic gut passed through the superficial fascia, muscle and transversalis fascia (*c*) Fortify the last line of sutures with a few silkworm-gut sutures passed through the fascial muscle and skin (*d*) Close the skin according to the operator's usual method that employed by the writer being preferably the continuous button-hole stitch with fine catgut

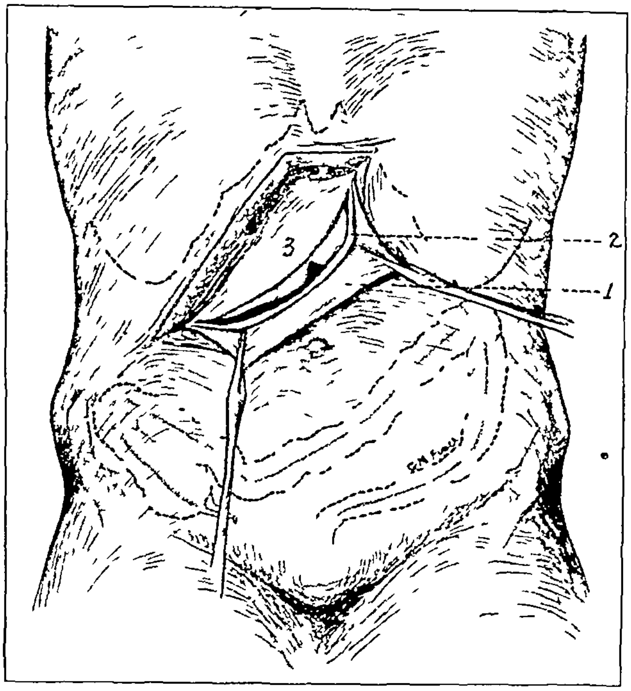

Fig 6—The incision in right upper quadrant 1, everted lower lip of wound showing transversalis fascia 2 margin of the peritoneum 3 upper peritoneal flap

Limitations—It is not intended that this operation shall be adopted in cases the careful roentgenologic and clinical study of which shows that the perturbation of intestinal function may be controlled by nonsurgical measures It is not an operation to be justified by other than profound consequences of conditions, local and general, to which I have alluded

It is not intended that this procedure shall in any way supplant the more radical operations to which I have alluded in cases in which the latter are demanded by conditions which I have described On the other hand, it would not only do the patient no good, but would merely complicate later operation if, for example, parietal implantation were practiced on a colon so atrophied and so functionally dead that its subsequent removal were a necessity

Results—In the last nine years, I have done this operation 226 times in cases in which I have done parietal implantation alone, and sixty-two times in which I have combined it with other operations such as cholecystotomy, gastro-enterostomy, resection of the transverse colon, resection of the sigmoid, appendectomy, appendicostomy, cecostomy and for various conditions within the pelvis I have had no death in cases in which parietal implantation was done alone I lost one case in which sepsis developed from an infected gallbladder, two in which I also did resection of the sigmoid, and three in which I had to deal with complicating purulent conditions within the pelvis—a gross mortality of a little over 2 per cent All of these fatal cases were of long standing, and in all of them there existed a profound and irreversible acidosis, death taking place by vasomotor paralysis As a rule, the secondary or final results have been most satisfactory In some of my earlier cases, I did not understand the significance of purgation atrophy of the colon and, consequently, did implantation when extirpation ought to have been done, with, of course, unsatisfactory results In a few other of my earlier cases, I did the fixation to the parietal peritoneum instead of to the transversalis fascia, with the result that the peritoneum gradually loosened from the abdominal wall, permitting the colon to redescend into the pelvis In a few cases that I recall, also among my earlier ones, I failed to appreciate the significance of an enlarged and ptotic cecum and thus compromised my results I also at that time failed to grasp the purport of ileac adhesions with resulting ileac stasis which perpetuated constitutional symptoms that I had sought to relieve I have had *only a very few cases of recurrence*, two of them having been traumatic and due to a fall

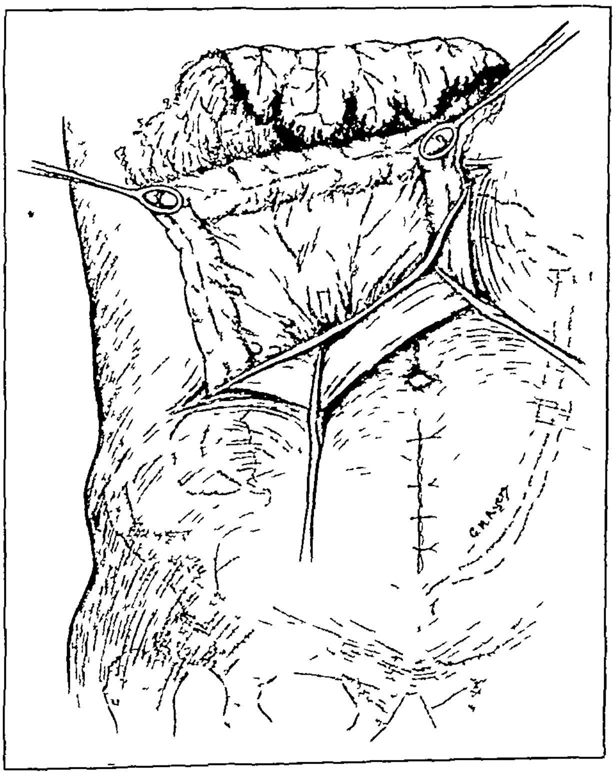

Fig 7—The colon and omentum brought out through the operation wound by which the cecum is lifted to its approximately normal position

On the contrary, I have had the opportunity to follow a number of these cases through several years, always with evidences of persistently good results In a case in the practice of Dr Pattersor ef Brook-ville, Ind , I did a parietal implanta seven years ago She remained per

defy functiona

few months ago when it was found that she had developed an enormous fibroid This was removed by hysterectomy The large incision enabled me to inspect the colon which was found precisely in the position in which I had implanted it seven years before This case is a sufficient answer to the academic criticism sometimes heard that this fixation cannot prove permanent

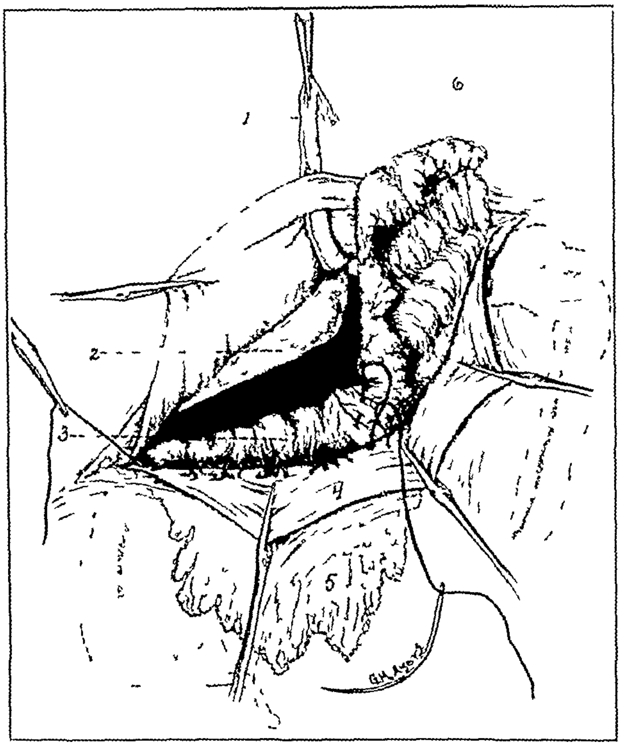

Fig 8—The implantation to the transversalis fascia is shown in progress the fixation being effected by continuous interrupted suture care being taken as shown to avoid important vessels in the omentum 1 ligamentum teres divided and brought out through the peritoneal flap 2 margin of the liver 3 colon covered by the base of the omentum 4 transversalis fascia 5 right half of omentum hanging in normal position within the abdomen 6 left half of the omentum the base of which has not yet been implanted

I am convinced that in the great majority, I do not hesitate to say that in over 250 of them, results varying from marked improvement to functional cures have been realized As already indicated, the restoration, more or less complete, of the bowel function is the rule, and with it a corresponding disappearance of the constitutional symptoms In a large number of cases digestive disturbances have been overcome practically from the date of operation The improvement in weight is generally marked, patients often picking up from 30 to 60 pounds within a few months after operation Mental depression amounting in some cases to simple melancholia, which often exists in these cases before operation, is generally overcome with great promptness The same may be said to be true of headaches, neuralgias and various of the rheumatoid conditions that depend on toxemia of intestinal origin

Union Central Building

ABSTRACT OF DISCUSSION

Dr Franklin H Martin Chicago A few fundamentals should be emphasized First all displacements of the colon and stomach shown by roentgenograms do not necessarily lead to serious symptoms, second, adhesions in the abdominal cavity do not necessarily indicate that pathologic conditions exist which should be relieved, in other words, they do not lead to symptoms The first is illustrated many times in the open abdomen and particularly by the pictures shown by Dr A J Ochsner at the Clinical Congress in Boston Many pictures of ptoses were shown where there were no symptoms The second is illustrated every day as we open the abdomen when we encounter adhesions everywhere with no symptoms arising from them What gives rise to symptoms? Displacements of these organs with fixation in disadvantageous positions, adhesions causing kinks and holding viscera in disadvantageous positions, this, in turn, making more kinks and interfering with function How does nature seek to cure these difficulties? This is answered by the way nature hangs up the colon when the animal assumes the upright position—by peritoneal fusion Therefore, if it is necessary to make a pexy, or to hang up anything in the abdomen or pelvis, *it is proper to hang it up by the peritoneum*, because that is the way it is done by nature Few of these cases require operation, it is only those cases in which the viscera are held in disadvantageous positions What is our experience with pexies, with the hanging up of viscera in the abdomen when it becomes necessary to do something because of ill health? We may not be able to restore such patients to a normal condition, but we can restore them to a more nearly normal condition What is our experience in the best way *of doing this? It is by operations which secure peritoneal fusion* Any shortening of the round ligament of the uterus that does not include the peritoneum with the round ligament will be a failure always Any shortening of the sacro-uterine ligament which does not also include the peritoneum will be a failure In the few cases in which we have had to do pexies, how do we do the operation to get the best results? The few times when we have found it necessary to suspend the stomach and the intestines we were surprised at the success we got in the hammock operation of Coffey notwithstanding we always dread to do it I have done a number of hammock operations under mental reservation but have always been agreeably surprised at the result The operation that secures the stomach to the abdominal wall is an operation that one dreads to do but it is almost invariably successful when the indications are clear for any kind of an operation

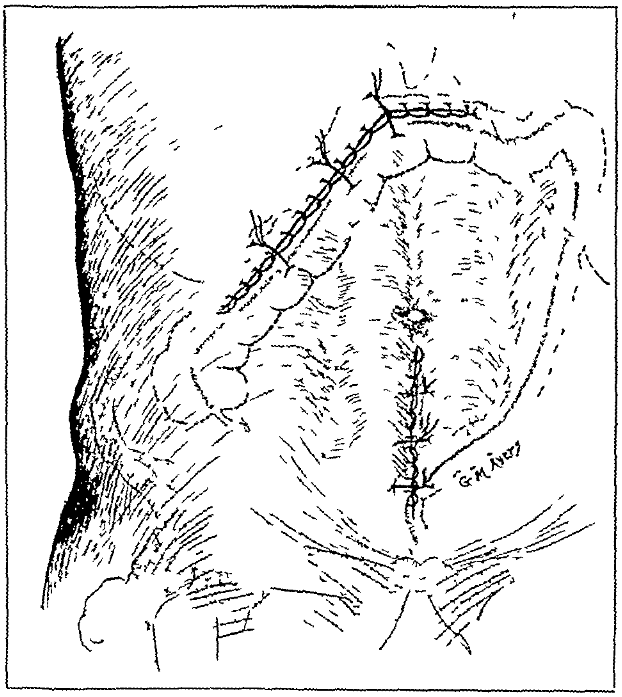

Fig 9—Both incisions closed with the colon in its restored position

Dr Robert T Morris, New York Surgery is a brutal way of overcoming what the internist overlooks In dealing with ptosis cases in general, we have to consider two very important factors (1) the group of susceptible individuals predisposed, and (2) a matter which has been overlooked very generally by the profession until recently, that of anaphylaxis Unless we can take these cases as a whole and make a very elaborate analysis, ruling out—and here is the point—the peripheral irritations and the focal infections, we shall not lessen a patient's ills much by doing any one operation We have to include the psychic feature also You may do almost any operation on a patient with epilepsy and that patient will feel better for months If you report your cases quickly enough you will have a brilliant series to report, but if you wait a year you will have less satisfactory results The day is coming when we shall have either a Cabot syndicate system or, as I prefer, we shall make up a report on any case in the form of a brief, very much as the lawyer makes up a brief for presentation to his client The consultant of the future is to group together the ideas of various specialists and then gradually deduce his conclusion To do a pexy for the relief of a condition which has neurasthenia as an incidental factor, not causative, may be a surgical mistake When concentrating our attention on causative factors the surgeon is similar to any other therapeutic resource which assists the general practitioner, very much as he would be assisted by the employment of a dose of salts The surgeon is a therapeutic resource in cases of neurasthenic or psychasthenic patients with ptoses

Dr Emery Marvel, Atlantic City N J The colon is the most susceptible part of the intestinal tract to stasis Dr Reed has mentioned the enlargement of the caliber of the cecum and passed the reduction of its caliber aside by infolding To that position it seems to me proper to take exception In the pictures presented by Dr Reed each case showed not only before operation, but also after, to have stasis in the cecum It seems to me, therefore, that some consideration of the cecum might be added to that which Dr Reed gives to the transverse colon It is from results following the operation of reduction of the caliber of the cecum that I have found much benefit to accrue to patients inconvenienced by stasis of this type If the peritoneal covering of the bowel only be coapted, it will probably be followed by stretching, but should sutures be applied to the longitudinal bands, the nonelastic striae, there will not be any stretching You, no doubt, have observed that most of the distention in the cecum is below the ileocecal valve, this can easily be reduced by inserting the sutures obliquely, which when tightened will draw the pouch up and obliterate it I suggest this procedure as a consideration with Dr Reed's paper so when the bands of adhesions are cut a few additional moments only would be necessary for reducing the caliber of the cecum

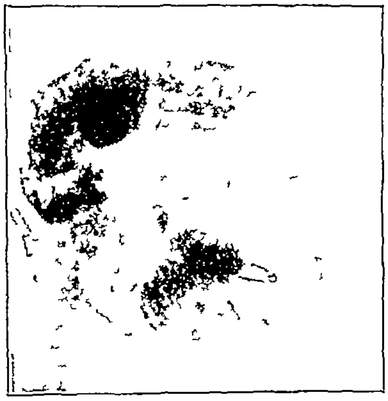

Fig 10 (same case as Figure 5) —Normal position of colon ten months after parietal implantation from two to three normal evacuations daily 48 pounds increase in weight

Dr Charles A L Reed, Cincinnati The question of susceptibility to this displacement has some foundation There are certain flabby persons who are ptotic because of their flabbiness There are certain of these cases, especially redundancies, which are congenital But the case of the very heavy man who as a baggage lifter had one of those heavy trunks suddenly precipitated on him caught it on his abdominal muscles and while he had had previously perfectly healthy alvine function, suddenly developed constipation and all of its sequelae, was obviously traumatic These ptotic conditions are common in shopgirls and in women in various employments calculated to bring persistent downward pressure on the viscera The question of predilection, so far as the predilection is made to mean heredity, is obviously not of very broad application The psychic factor is not much of a determining factor in these cases No one, by taking thought, can put his bowels out of joint The woman knows when she has pain and the various physical difficulties to be found among the sequelae of abdominal lesions Therefore, you cannot talk such a patient into a cure When there is a functional restoration, the talking is not necessary Dr Marvel's suggestion is a very good one, and especially taken in connection with this fixation or implantation operation, when it may very well be done The infolding of the cecum and lessening of its capacity may be done as a part of the conservative measure but very often the wall of the cecum is so thin that the infolding and stitching might better not be undertaken

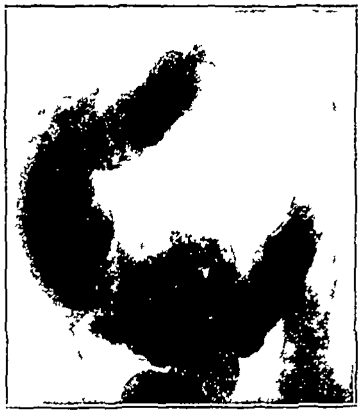

Fig 11 —Showing result in narrow waisted woman five years after parietal implantation patient had been twenty years an invalid since operation she has acquired new profession and gained 60 pounds in weight

CONTRIBUTIONS TO THE PHYSIOLOGY OF THE STOMACH

XXXV THE NEWER INTERPRETATION OF THE GASTRIC PAIN IN CHRONIC ULCER *

HARRY GINSBURG, S B
ISIDOR TUMPOWSKY, M D
AND
WALTER W HAMBURGER, M D
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The precise nature of the characteristic pain of peptic ulcer is a matter of some dispute It is generally assumed to be dependent on and to bear a direct relation to gastric acidity This view has seemed especially plausible in view of the alleviation of the pain by alkalies Many textbooks and teachers state that the pain is due to direct irritation of the sensory nerve endings at the base of the ulcer by the acid or by mechanical means by invoking peristalsis Still others believe the distress is caused by the acid bolus impinging against the pylorus

HAS THE STOMACH PAIN NERVES?

Before discussing the irritating action of acidity or motility, we must consider the existing confusion regarding visceral pain in general and gastric pain in particular The situation is well discussed in Hertz's work [1] From observations in a case of gastric fistula, Carlson[2] concludes that the sensation of pain cannot be produced from the normal mucosa by any stimulation confined to the mucosa itself Lennander[3] concluded from his researches that only the parietal peritoneum is sensitive to pain and that visceral pain is due to stimulation of the parietal peritoneum by pressure, inflammation or traction on the mesentery The conclusiveness of these experiments was overthrown by Kast and Meltzer,[4] who pointed out the fallacy of employing cocain infiltration They demonstrated that local infiltration with cocain abolishes all sensation even after electrical stimulation, that the same amount of cocain injected into the leg would produce the same results, and that, therefore, systemic absorption of the drug is sufficient to abolish visceral sensations Furthermore, they proved that there is actual pain sensation and that the sensitivity of the inflamed organ is still greater These results were confirmed by Ritter[5] The slight degree of sensitiveness of the viscera as compared with the skin is due to the smaller number of afferent nerves, as shown by Langley[6] We may assume that the stomach has pain nerves The question arises, Does the acid irritating the ulcer cause pain?

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* Dr Ginsburg died March 9 1916 during the course of the research for which he was most responsible

* Read before the Section on Practice of Medicine at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

[1] Hertz Sensibility of the Alimentary Tract London, 1911, p 47

[2] Carlson A J Am Jour Physiol xxxvi 154

THE RELATION OF ACIDITY TO PAIN

In normal stomachs, injection of weak acids causes no pain This has been shown repeatedly Lowenthal[7] gave 250 c c of hydrochloric acid by tube and left it in one minute With 0 3 per cent no sensation was produced, while with 0 5 per cent an occasional subject would experience a warm sensation Hertz, Cook and Schlesinger[8] found that 0 5 per cent hydrochloric acid causes no sensation in normal individuals Schmidt,[9] using from 0 5 to 2 per cent acid through gastrostomy openings of the empty stomach in three cases failed to produce symptoms Boring,[10] with the enormous strength of acid of 5 per cent, experienced a sensation very much "like the ache of hunger"

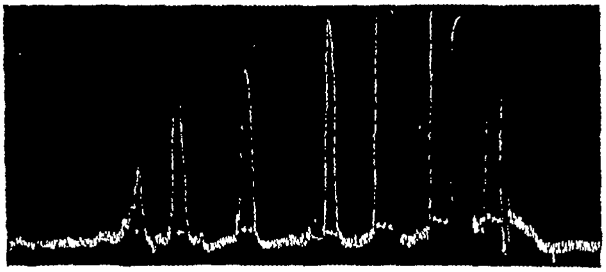

Fig 1—Case of gastric ulcer, showing that degree of pain varies with strength of contractions

In cases of ulcer, the most varied results have been reported Heinecke and Van Selms[11] produced pain in four cases of ulcer by administering from 0 1 to 0 4 per cent acid by tube Bonninger[12] states that 100 c c of 0 36 per cent hydrochloric acid always produces a violent pain in ulcer which is temporarily relieved by milk On the other hand, Hertz[13] reports that in six cases of ulcer whose diagnoses were confirmed by operation, 4 ounces of 0 5 per cent hydrochloric acid produced no sensation even when pepsin was added Lowenthal's results agreed with those of Hertz These results are especially valuable since it is doubtful whether the free acidity of the gastric contents ever exceeds this concentration It is well known that hyperacidity symptoms may be present with normal acid values[14] and even in cases of achylia[15] Boas and others report cases in which persons obtain relief from soda who have no increased acid values[16] Bolton,[17] also, states that pain has little or no relation to acidity inasmuch as pain is relieved by food whether the gastric contents are acid or not Hyperacidity may remain when pain is relieved by treatment[18] Some of these diametrically opposed results may perhaps be explained by the suggestion that they depend on the emptying time and the condition of the pylorus, and that the acid is neutralized by the bile and intestinal juices We may also assume that the stomach in some of these cases presents a hyperesthesia for acid However, it appears sufficiently clear from such a great diversity and absolute disagreement of findings that *acidity alone cannot be the cause of pain*

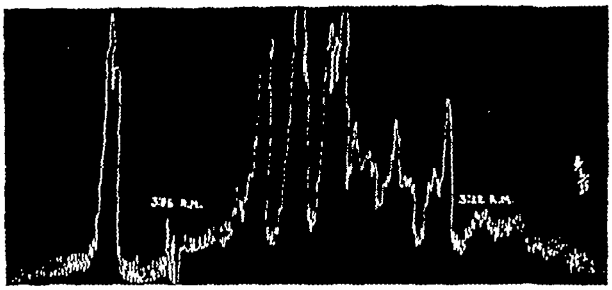

Fig 2—Case of gastric ulcer, showing period of tetany

TENSION THE ADEQUATE STIMULUS

More recent advances in stomach physiology tend to the conclusion that the adequate stimulus for pain in hollow viscera like the stomach is tension Hertz pointed out that observers of gastric sensibility overlooked this factor He believes that tension is the only cause of true visceral pain, and demonstrated that inflation of the stomach leads to a sensation of fulness when the intragastric pressure is from 12 to 15 mm of mercury[19] Actual pain results if distention is produced rapidly The tension factor in stomach con-

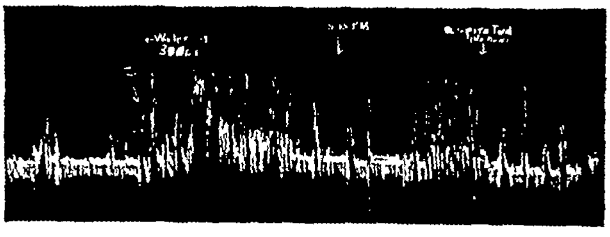

Fig 3—Immediate effect of rapidly injecting 300 c c of tap water

tractions can well be demonstrated Fluoroscopic examination discloses in even the normal fasting stomach peristaltic waves beginning about the middle of the body, growing deeper as they reach the pylorus, contracting the cavity It is easy to understand that the exaggerated peristalsis in the hypertonic organ causes an excessive intragastric pressure, and that the muscular tension in the irritable condition causes pain

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[3] Lennander, K G Abdominal Pain The Journal A M A, Sept 7 1907 p 836

[4] Kast and Meltzer Med Rec New York 1906 lxx 1017

[5] Ritter Central f Chir, 1908 xxxv 609

[6] Langley Brain 1903, xxvi 23

[7] Lowenthal Berl klin Wchnschr 1892 xxix 1188

[8] Hertz Cook and Schlesinger Jour Physiol 1908 xxxvii 481

[9] Schmidt J E Mitt a d Grenzgeb d Med u Chir 1909 xix, 278

[10] Boring Sensations of the Alimentary Tract Am Jour Psychol xxvi 48

[11] Heinecke and Van Selms Arch d mal de l app digestif, 1908 ii 467

[12] Bonninger Berl klin Wchnschr, xlv Sec 1 p 396

[13] Hertz Sensibility of the Alimentary Tract, p 57

[14] Talma Ztschr f klin Med, 1884 vii 407

[15] Einhorn Arch f Verdauungskr vii 23 Kuttner L Ztschr f klin Med liii 1 Leo Therap d Gegenw December 1904

[16] Boas I Diagnostik und Therapie der Magenkrankheit Ed 6, Leipzig 1911, p 355

[17] Bolton Ulcer of the Stomach, London 1913 p 149

[18] Hertz Sensibility of the Alimentary Tract p 56

[19] Hertz Sensibility of the Alimentary Tract pp 47 54 Boring Sensations of the Alimentary Tract p 45

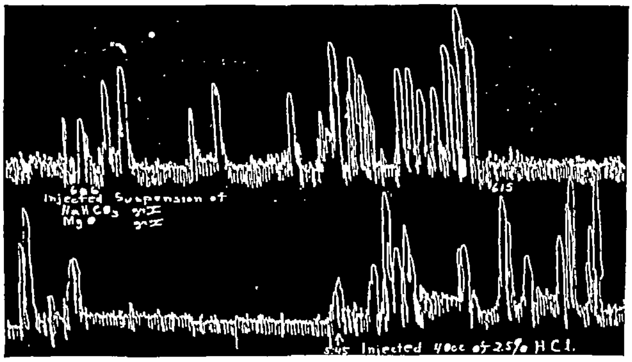

Fig 4 —Injection of 40 c c of 2 5 per cent hydrochloric acid giving fairly vigorous contractions lasting thirty minutes which were abruptly terminated nine minutes after the administration of an aqueous suspension of magnesium oxid and soda 10 grains of each

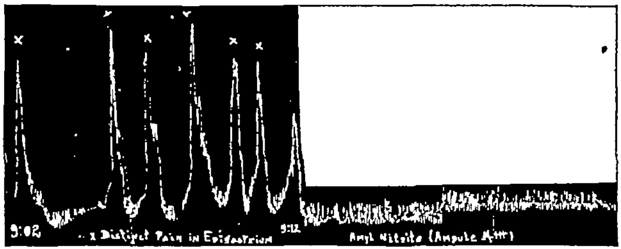

Fig 5 —Inhalation of a 3 minim pearl of amyl nitrite absolutely abolished the painful stomach contractions resulting in a state of flaccidity which persisted for four hours

Moynihan[20] now believes that the pain is not so much due to the chemical changes in the chyme as the alterations of the muscular activities of the stomach and duodenum which may be stimulated by the chemical factors Boas[21] also suggests that gastric pain and tenderness occur only at the time of emptying and are rapidly relieved by food taking due, as he says, to abnormally strong pyloric contractions occurring stronger at the end of digestion Bayliss and Starling[22] state that a wave occurs in one part of the alimentary tract while the part below should relax Organic diseases or spasm from reflex irritation may prevent it so that the segment between the peristaltic contractions and the obstruction is subjected to a steadily increasing tension

With tension as the immediate cause of pain an explanation of the relation of acidity is offered from a consideration of the work of Edelman[23] and Ducchesi[24] They find that hydrochloric acid stimulates peristalsis Such action would, of course, tend to increase intragastric tension Carlson[25] does not find this to be true in normal man, and we have not found it so in the few cases in which we used it in ulcer Cannon finds peristalsis and tonus even when the stomach contents are alkaline[26] Hertz[13] offers another solution which might reconcile the relation of acidity and pain on the ultimate basis of tension Excess acid passed into the duodenum prevents relaxation of the pylorus, permitting an increase in intragastric tension The effect of acidity in the duodenum, of course, will depend on the alkalinity of the duodenal juices Hertz also suggests that there are more nerve endings in the deeper structures of the stomach wall when exposed by ulcer and that these are stimulated by acid, alcohol and coarse foods, causing increased peristalsis and inhibition of pyloric relaxation This view has been confirmed by paralysis of the nerve endings with orthoform His Roentgen-ray examinations show that duodenal ulcer is accompanied by increased gastric tonus Hyperacidity may then cause pain indirectly in many ways, causing hyperperistalsis and prevention of pyloric relaxation with usually intensified gastric tonus In this way it effects a true pyloric syndrome which may be aggravated if there is also a hyperesthesia toward acid It has been emphasized that chronic appendicitis and gallbladder disease are often associated with hyperperistalsis and hyperacidity, which may explain the epigastric pain so frequently found in these conditions Cannon and Murphy[27] demonstrated that injury of the intestines causes inhibition of pyloric relaxation which may lead to hypertonus The pylorus may be felt as a tumor in operating for the lesion All these considerations tend to prove that the pain in gastric ulcer is not primarily a matter of mere acidity but a condition due to motor activity of the stomach manifested by hypertonus, hyperperistalsis and pylorospasm, often with a condition of hyperesthesia

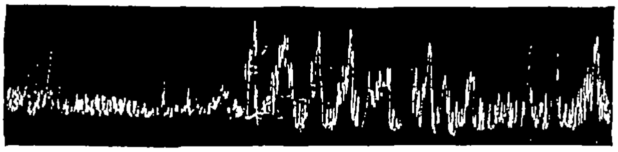

Fig 6 —Injection of 15 minims of pituitary extract subcutaneously contractions began in ten minutes lasted thirty five minutes and were followed by a long period of inactivity

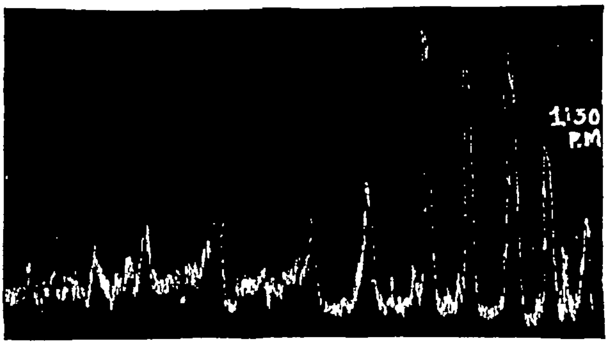

Fig 7 —Case of gallstones showing the onset of contractions which were accompanied by pain

HUNGER AND TENSION

The mechanism of hunger has been quite definitely established through the work of Carlson[28] and Cannon and Washburn[29] They studied the activity of the empty stomach by means of a delicate balloon attached to a manometer which registered the changes in intragastric pressure due to contractions of the stomach Boldireff,[30] using dogs, was the first to apply this method He found that the whole alimentary tract had a periodic activity when not digesting He found periods lasting from twenty to thirty minutes characterized by rhythmic contractions ten to twenty in number followed by a rest of one half to two hours and repeated He believed that hunger caused the contractions Cannon and Washburn extended their observations to man They found that the strong contractions of the stomach were accompanied by the sensation of the hunger pang While the tracing was taken the observed, who could not see the results, was asked to press a key when the sensation was noted Invariably, the feeling occurred after the powerful contractions had reached their height The feeling disappeared when the contractions ceased, and the contractions could not be controlled by the observed Carlson elaborated extensively on these results, using a gastric fistula man in part of the work He found a fairly close correspondence between the degree of hunger and the strength of the contractions, and that the recognition of this condition as hunger depends also on the rapidity of the contraction phase[31] It was reported as early as 1898 that when the stomach empties itself the midregion becomes narrowed to a tubular portion as seen by the Roentgen ray[32] Waves then originate as tonic rings separating the tube from the rounded cardiac sac These rings form depressions seen in the Roentgen-ray plate A more recent Roentgen-ray examination of a normal fasting stomach with simultaneous record of the hunger contractions by means of a bismuth coated balloon was made by Rogers and Hardt[33] Fluoroscopic examination, which the authors had the privilege of witnessing, disclosed peristaltic waves beginning about the middle of the body, growing deeper as they reached the pylorus There were frequently as many as three constricting rings passing over the stomach at one time As these occurred the tracing registered extremely high hunger contractions, and the subject invariably pressed the key recording the hunger pang accompanying the contractions As Carlson states, the afferent nerves of the mucosa are not primarily concerned in the genesis of hunger Hunger seems to be produced by contractions only, that is, by stimulation of the nerves in the muscularis[34]

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[20] Moynihan Duodenal Ulcer 1912 Ed 2 Philadelphia and London

[21] Boas I Diagnostik und Therapie der Magenkrankheit Ed 6 Leipzig 1911 p 616

[22] Bayliss and Starling Recent Advances in the Physiology of Digestion London 1906

[23] Edelman Dissert (Russian) abstr Jahresb ü d Fortschr d Physiol xx 119

[24] Ducchesi Arch p le Sc Med 1897 xxi 154

[25] Carlson Am Jour Physiol xxxii 249

[26] Cannon Am Jour Physiol 1907 xx 299

[27] Cannon and Murphy Ann Surg 1906 xliii 512

[28] Carlson Am Jour Physiol xxxi 151 175 212 318 xxxii 245 369

THE PRESENT PROBLEM

It has probably already occurred that there is a significant similarity between the condition of the stomach in hunger and in ulcer The difference appears to be largely a matter of degree of sensitivity caused perhaps by hyperactivity and hyperesthesia The situation admirably illustrates that the laboratory man is justified in censuring the clinician who only considers those things pertinent which manifest clinical symptoms For as the laboratory worker points out, the same condition acting in two cases may produce clinical symptoms in one and none in the other That the hunger contractions of the normal stomach have a direct bearing on the pain in ulcer might have been anticipated from the statements of Hertz[35] that "the same mechanism producing pain gives fulness this latter sensation occurs for months before pain", and Moynihan,[36] that "the characteristic hunger pain of duodenal ulcer is preceded and accompanied by sensations of fulness and hunger" From the close analogy between the state of hunger and the more plausible view that ulcer pain is due to tension, it was thought that a study of the conditions by the balloon method would yield a concrete demonstration of the tension in the one case and prove its similarity to hunger contractions in the other

METHOD AND RESULTS

Ten cases under the care of one of us (W W H) at the Cook County and Michael Reese hospitals diagnosed clinically as peptic ulcer were examined Two tubes, each about 5 mm in diameter, were prepared To one was attached the balloon The other was a modified Rehfuss tube made by enclosing a piece of lead at the very end and perforating the tube for about 3 cm above It was expected that the weight would carry the tube to the dependent parts so that the contents might be aspirated from time to time The two tubes were swallowed at once The balloon tubing was connected with a T tube through which the balloon was distended and a chloroform manometer A cork float on the column of chloroform supported a rod to which was attached an indicator to write on a slowly moving drum The aspiration tube was connected with a wash bottle holding about 300 c c By suction through the shorter arm of the bottle the contents of the stomach could be quickly aspirated By the same arrangement various solutions could be rapidly and easily forced into the stomach without the knowledge of the observed The subject was at rest in bed while the tracings and manipulations were made, and usually fell asleep, aroused occasionally by distress Observations lasted as a rule from two to four hours, and in one case a continuous twenty-four hour tracing was obtained

REPORT OF CASE

P S, man, aged 27, was admitted to the Michael Reese Hospital, July 19, 1915, complaining of pain in the epigastrium coming on about one hour after eating The distress had been growing worse for the preceding two years It was not present in any other part of the abdomen, and was not referred posteriorly It was aggravated by food of any description and by drinking, and was more severe about an hour after eating It was relieved by pressure over the abdomen and by vomiting Nausea and vomiting began with the onset of the condition, and occurred about one-half to one hour after meals Vomiting sometimes occurred after water There was a sour taste and odor and a burning sensation on vomiting He had noticed a small amount of blood in the vomitus only once seven months before entering the hospital Eructations occurred more or less constantly all day and caused a sour taste in the mouth and burning in the throat He had never noticed blood in the stools He had lost forty pounds in weight since the beginning of his illness

Examination showed marked visible peristalsis extending from the left upper to the right lower abdomen This region was distended and somewhat rigid After an Ewald meal, 750 c c were recovered Between 1,000 and 2,000 c c were commonly recovered on aspiration of the stomach at different times The free acidity averaged about 28 and the total about 60 Fluoroscopic examination showed a large stomach displaced downward No cap was seen A thin line of bismuth was seen to pass Otherwise the pyloric end was very broad and sharply cut off from the rest of the organ After thirty hours considerable bismuth still remained in the stomach

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[29] Cannon and Washburn Am Jour Physiol 1912 xxix 441
[30] Boldireff Arch biol de St Petersburg 1905 xi 1
[31] Carlson Am Jour Physiol xxxi 180
[32] Kaestle Rieder and Rosenthal Arch Roentgen Ray 1910 xv, 21 24
[33] Rogers and Hardt Am Jour Physiol, xxxviii 274
[34] Carlson Am Jour Physiol xxxi 188
[35] Hertz Sensibility of the Alimentary Tract, p 59
[36] Moynihan Duodenal Ulcer, p 101

A diagnosis was made of cicatricial pyloric narrowing following gastric ulcer with gastroptosis Tracings taken from this case showed extremely marked contractions accompanied by visible peristalsis usually (Fig 1) Periods of tetany were quite frequent (Fig 2)

From repeated observations on ordinary cases, the regular picture of the normal hunger contractions was obtained, but it was striking that the contractions were not more severe and of approximately the same excursion as the normal hunger picture In hunger the sensation is interpreted as a pang, in ulcer, as a pain With the onset of the strong contractions shown in our tracings, the patients complained of symptoms varying in interpretation from a feeling of fulness and tightness to severe epigastric pain In several cases the patient was aroused from sleep with the complaint of pain The sensation nearly always came on when the contractions had reached their height In one case at the height of the contraction the patient vomited Between the periods of activity the patient registered no complaint These contractions could not be seen and were not understood by the patients While the record was taken, various substances were injected into the stomach by the arrangement described In one case 300 c c of milk caused transitory contractions The same was found true by an equal quantity of tap water (Fig 3) This may have been caused by the rapid introduction of the liquids causing distention[37] Hydrochloric acid in strengths of 0 5 and 1 per cent caused little or no effect on the contractions and no effect on the sensations In one case 40 c c of 2 5 per cent acid caused a period of rather vigorous contractions lasting one-half hour and terminating abruptly nine minutes after administering a suspension containing 10 grains each of soda and magnesium oxid (Fig 4) In another single case 70 c c of 5 per cent acid caused intense burning, and the patient vomited balloon and tubes Administration of soda immediately relieved him, and he ate his luncheon five minutes later entirely comfortable The subjective sensations caused by 2 5 per cent acid could not be relied on since the subject was very ignorant and untractable One per cent solutions of soda in 300 c c quantities caused no noticeable effect A 3 minim pearl of amyl nitrite was given by inhalation in one case The patient became extremely faint, and the strong contractions which had been registering absolutely ceased, to be followed by a period of absolute flaccidity which lasted four hours (Fig 5) While a tracing was taken of a quiescent stomach, 15 minims of pituitary extract were injected subcutaneously into the arm In ten minutes well marked hunger contractions set in, even displaying short periods of tetany This lasted for thirty-five minutes, when the stomach again became flaccid (Fig 6) In a case of gallbladder disease in which fluoroscopic examination of the stomach showed no abnormality, strong contractions occurred with pain, closely resembling the results in ulcer (Fig 7)

CONCLUSIONS

1 The finding of strong contractions of the stomach accompanying the pain of gastric ulcer seems to confirm the idea that pain is due to tension

2 The marked hunger contractions cause pain in a hyperirritable condition of the stomach by increasing intragastric pressure

3 The conception that gastric pain is due to tension will explain many obscure conditions simulating gastric ulcer, viz, achylia gastrica, chronic appendicitis and gallbladder disease

4 Hyperacidity, alone, may be a factor by reflexly causing hypertonus, hyperperistalsis and pylorospasm, allowing greater tension to be produced

5 The subjective relief of pain by alkalies does not necessarily prove that acid is the cause of pain, but may be interpreted on the basis that alkalies prevent the development of pain producing hypertonus by neutralizing the causative factor of such hypertonus, i e, acid

6 Pituitary extract stimulates contractions, as is to be expected from its property of stimulating smooth muscle

7 Amyl nitrite in the case reported abolished the contractions, probably by stimulating the inhibitory nerves or by lessening the reflex excitability

8 From the results obtained, hydrochloric acid in the strength that it may occur in the stomach (about 0 5 per cent) causes no appreciable effect The authors do not feel justified in drawing final conclusions regarding the effect of acidity until more cases are studied whose emptying time and condition of the pylorus is more thoroughly observed

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[37] Carlson Am Jour Physiol xxxii 248

CARBOHYDRATE RESTRICTION IN THE MEDICAL TREATMENT OF GASTRIC HYPERACIDITY AND ULCER*

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Gastric hyperacidity forms a very considerable part of the symptoms of dyspepsia which the physician is called on to treat It may exist (1) as part of the syndrome associated with prolapsed viscera and the attendant neurasthenic state coupled with a faulty dietary, or (2) as a result of reflex disturbance from some neighboring abdominal organ, such as the gallbladder or appendix, or (3) as a result of faulty habits of mastication and the choice of appropriate food

Although easy of diagnosis, the cause of the disturbance is not always so easy to fathom The chief factor concerns the remote results of chronic hyperacidity It is safe to say, in the present state of our information, that ulceration in stomach or duodenum rarely occurs without long standing hyperacidity Moreover, the medical treatment and cure applicable in a large percentage of ulcer cases depends to a great degree on neutralization of the acid secretions by the administration of appropriate food and sufficient alkali This has been amply demonstrated by Sippy[1]

Of the many explanations as to the cause of chronic ulcer offered since the day of Cruveilhier and Rokitansky, but few have stood the test of time The corrosive action of hyperacid chyme, coupled with factors which render the gastric mucosa more susceptible to digestion, such as metastatic emboli, local thrombosis, trauma, infection or a combination of these conditions, serves as the usual explanation

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* Read before the Section on Practice of Medicine at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

[1] Sippy, B W Gastric and Duodenal Ulcer Medical Cure by an Effective Removal of Gastric Juice Corrosion The Journal A M A., May 15 1915, p 1625

In the production of ulcer there may be mentioned the experimental ligature of arteries supplying certain portions of the gastric wall, the addition of bacterial infection to acutely traumatized areas of gastric mucosa, the local injection of substances acting as chemical irritants, the production of general anemia with the addition of local irritants, and last, by artificial occlusion of the pylorus with resulting motor insufficiency after acute ulceration has been produced Although acute ulceration can be readily produced by these means, the majority heal readily and do not become chronic In other words, the tendency to heal is rarely absent in experimentally produced lesions

In patients manifesting ulcer symptoms the same tendency is present, providing the cause is sought for and relieved and the ulcer area protected from the action of acid chyme by properly selected food frequently administered and by doses of the alkalies adequate to secure neutralization of the gastric juice As Pawlow[2] has stated "In clinical, pharmacologic and physiologic textbooks, it is stated that the alkalin salts of sodium promote a flow of gastric juice We may look in vain, however, for any experimental foundation to support this doctrine" In fact, alkalies have been shown to exert a distinct inhibitory influence on the gastric glands quite distinct from their neutralizing effects on acids already present In most patients a combination of causative factors can usually be found The first aim, of course, should be to correct the cause

Of the first group mentioned above, prolapse of the viscera, including the stomach, is, in my experience frequently associated with the hypersecretion of acid chyme If with this factor there is also associated a faulty dietary, especially of the carbohydrate elements, favoring bacterial decomposition within the organ, and if, because of the chronicity of the prolapsus, spasm and motor insufficiency has occurred, the conditions are favorable to the train of symptoms which we have come to recognize as chronic ulcer Our first aim should be, therefore, to support the viscera, including the stomach, by proper appliances or belts in as nearly a normal position as is possible under the circumstances, and second, to restrict or limit the intake of carbohydrate foods in order to lessen bacterial fermentation and the elaboration of organic acids As is well known, hypomotility favors bacterial fermentation within the stomach

Enough experience has accumulated to show the importance of attention to septic foci about the teeth and tonsils The organisms daily swallowed by patients with septic mouths, septic tonsillar crypts and nasal sinuses, may contribute materially to bacterial fermentation of the carbohydrate elements usually present in excess in a mixed meal, if not, as believed by many investigators, to actual ulceration In this connection it has always been a source of wonder to me why more patients with septic mouths from extensive pyorrhea did not manifest stomach symptoms Alveolar abscesses may serve as foci of infection, although it is difficult to understand the method of bacterial metastasis and the supposed selective affinity for certain tissues

Of the second group in which reflex disturbance from some neighboring organ may be a factor of importance, my records of the past ten years have shown that in approximately 50 per cent of the patients manifesting symptoms of hyperacidity and ulcer various causes have appeared to be operative In order of frequency these have been coincidental gallbladder disease, stones or adhesions, chronic obliteration, twist or adhesions involving the appendix, uterine malposition or adhesions, tubal disease, renal or ureteral stone and abdominal hernias On the other hand, many patients with such conditions do not complain of disturbed digestion, while many others with no secretory disturbance complain of gastric distress Syphilitic ulcer has been excluded from these figures, for when it has existed the cure has resulted from the employment of specific measures in addition to those applicable to the treatment of simple septic ulcer

In the third group there occurs apparently an increasingly large number of patients in which the disturbing causative factor appears to be a tendency to an abnormal consumption of carbohydrates, coupled with poor salivation as a result of hurried and faulty mastication due to poor teeth The monosaccharids, such as dextrose, levulose and galactose, are fermented by yeast into alcohol and carbonic acid Lactic acid is also formed by the action of the *Bacterium lactis* The disaccharids, such as saccharose, maltose and lactose, are not fermented by yeast, but may be broken up into lactic acid by the *B lactis* or butyric acid by the *B butyricum* of Pasteur, or the micrococci of butyric fermentation discovered by Fitz Of the polysaccharids, starch is likewise subject to bacterial fermentation with the formation of organic acids

For years the idea has held ground that an excessive protein diet was a factor of importance in the causation of hyperchlorhydria There can be no doubt that the symptoms of such a condition and that of ulcer are sometimes found in patients who have been excessive meat eaters For this reason, and certain experimental data, the belief has been prevalent that meat extractives caused the hypersecretion of hydrochloric acid through acting as chemical excitants, and as such should be avoided in the treatment of gastric hyperacidity This is a matter of relative importance only Regardless of what experiment may show in animals, the deductions when applied to patients must justify themselves by results It may be mentioned that foods rich in albumin bind larger quantities of hydrochloric acid than carbohydrate foods This holds true in experiment on normal animals and is probably true under pathologic conditions in man

The tendency of the past few years has been toward the restriction of meats and albuminous foods in the treatment of hyperchlorhydria and ulcer and the substitution therefor of carbohydrate foods This belief has gained ground largely from the work of Pawlow, who published his experiments in 1902 He showed that in dogs the quantity of gastric juice secreted from hour to hour was greater after meat than after bread and milk He likewise showed that the acidity of juice secreted after meat was greater (0 56 per cent) than after bread (0 46 per cent) The juice secreted after bread contained, however, more ferment than that secreted after meat The point should be noted that the hourly intensity of gland work was much less with bread, which would mean that the time required for the digestion of its protein constituents was longer and that the duration of gastric secretion was correspondingly protracted It seems, therefore, in the type of carbohydrate digestion manifested by bread and cereals, that there exists a slightly lower hydrochloric acidity, but a more protracted secretion Since there is no provision in the stomach for carbohydrate digestion, it has seemed plausible, in this day of excessive sugar consumption, that this common dietetic fault might be responsible for the altered gastric secretion found in a large majority of patients suffering with hyperacidity, pyloric spasm and ulcer

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[2] Pawlow The Work of the Digestive Glands London 1902

I am indebted to L M Estabrook, Chief of Bureau of Crop Estimates, U S Department of Agriculture, for Table 1, published in an earlier article,[3] which shows the great increase in sugar consumption for the period 1871 to 1911 in the United States, United Kingdom, France and Germany The per capita consumption[4] has been computed by adding the production of a given country to its imports and subtracting its exports

The point is made that the moderate consumption of carbohydrates under normal digestive conditions is a different matter than excessive consumption when hyperchlorhydria is present In patients with pyloric spasm or ulcer the excess is required to remain in the stomach during the process of protein digestion of the other constituents of a mixed meal, with the result that bacterial fermentation follows and the symptoms of so-called amylaceous dyspepsia become evident As is well known, patients with hyperacidity complain of *their inability to digest starchy foods* Their distress appears to be due primarily, not to the hydrochloric acid content of the stomach, but to the bacterial elaboration of organic acids from carbohydrate fermentation Later in the process of gastric digestion, usually after one hour, hypersecretion of hydrochloric acid occurs as a result, I have believed, of the stimulating effect of such organic acids as butyric, lactic, acetic and proprionic If either the Rehfuss, Einhorn or simple duodenal small tube with the catheter end is employed after a hastily swallowed bulky carbohydrate meal and the secretion removed at five to ten minute intervals the curve of hydrochloric acid does not reach its maximum as a rule until after the expiration of one hour, while the organic acids become evident within a much shorter interval Pawlow[2] has shown that butyric acid strongly excites gastric secretion Although my experience with the test meal advocated by Skaller[5] is limited, it has much to commend it It consists of 5 gm of Liebig's beef extract in 200 c c of water It is more palatable and gives a truer picture of gastric secretion than the Ewald meal

TABLE 1—ESTIMATED AVERAGE PER CAPITA CONSUMPTION OF SUGAR IN FOUR IMPORTANT COUNTRIES

Year	United States * Pounds	United Kingdom† (Net Imports) Pounds	France † Pounds	Germany ‡ Pounds
1871	36	44	17	12§
1881	43	64	22	15
1891	61	78	26	21
1901	71	91	24	27
1911	77	92	39	42
1912	82 4			

* For years ending June 30
† For years ending December 31
‡ For years ending August 31
§ For 1872

Clinically, patients with hyperacidity, delayed motility and ulcer do better when their intake of carbohydrate foods is lessened Deeks[6] called attention to this in 1912 Although I cannot subscribe to all the restrictions imposed by him, I am convinced that excess of carbohydrates is a common dietetic error with such patients I am also convinced that restriction generally to those articles of food which do not contain more than from 10 to 15 per cent carbohydrates, with small additions of food which contain more than 20 per cent, such as bread and potato, together with sufficient alkali to limit the secretion of hydrochloric acid, has given better results than heretofore obtained The following general diet list in hyperacidity I have found useful, articles from which may be omitted if found necessary in any given case

Proteins and Fats—Soft boiled or poached eggs, omelette, broiled or baked fish, bacon, chicken, oyster or clam broth, custard (use slight amount of sugar), butter, milk and cream, cream cheese, olive oil, tea

Five Per Cent Carbohydrates (Fodder-Vegetables and Fruits)—Asparagus, cauliflower, water cress, spinach, eggplant, lettuce, beet or dandelion greens, string beans, olives, grape fruit pulp

Ten Per Cent Carbohydrates (Fodder-Vegetables, Fruits and Nuts)—Onions (boiled), squash, turnips, carrots, beets, lemon juice (one teaspoonful with one ounce olive oil twice daily as salad dressing), orange juice and pulp, peaches, watermelon, cantaloupe or musk melon, hickory nuts, filberts

Fifteen Per Cent Carbohydrates (Fodder-Vegetables, Fruits and Nuts)—Green peas, parsnips, canned Lima beans, baked apple (pulp), pears, pecans, almonds, English walnuts

The patient may take daily in addition, one potato, three slices of toast, one portion breakfast cereal or rice, puree of pea corn ("Kornlet") or spinach

Avoid excess sugar in above foods, candy, syrups, condiment sauces pickles, green corn, tomato, cornstarch, macaroni, spaghetti bread, crackers, cocoa, chocolate, coffee and vinegar

In addition the patient is requested to take one glass of milk between meals and at bedtime After each meal and after each glass of milk between meals, a powder consisting of heavy magnesium oxid, sodium bicarbonate and bismuth subcarbonate is to be taken in from one half to one teaspoonful doses in one third glass of water If evidences of hypersecretion exist the powder is given every two hours, regardless of the feedings, between 7 a m and 10 p m, with an additional glass of milk and a dose of the powder should the patient awake during the night By this plan, the details of which were more generally stated in the previously published article,[3] relief is soon obtained, the evidences of pyloric spasm and food retention are decreased and the pyrosis and hunger pain soon disappear due to the lessened gastric secretion and hunger contractions It is, of course, difficult to rid the stomach of the bacteria of organic acid fermentation If the organic acids persist, as evidenced by flatulence and pyrosis, gastric lavage may be used once daily one hour before the principal meal A liter of a solution of salicylate acid 1 to 1,000 is well adapted for this purpose

In the treatment of ulcer it is necessary to secure absolute rest, usually in the hospital Patients treated at home are usually unable to secure the rest and nursing cooperation necessary to the best results In other words, they, as a rule, cannot be made while at home to attend strictly enough to the business of getting well Although the details of the ulcer diet here given differ somewhat from the plans advocated by Lenhartz and by Sippy, the essentials are the same in so far as the attempt is made to control the supersecretion, to limit the secretion of hydrochloric acid and by frequent feedings and sufficiently large doses of the alkalies to prevent continuous local irritation of the ulcer area This plan has been used with slight modifications since 1913 with good results in prepyloric, pyloric and duodenal ulcers

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[3] Stone W J The Carbohydrate Factor in the Causation and Treatment of Hyperacidity and Ulcer The Journal A M A Jan 29 1916 p 324

[4] Consumption includes all uses in households in factories and elsewhere Figures for the United States and the United Kingdom refer partly to raw and partly to refined sugar for France figures for 1871 1881 and 1891 refer to raw and for 1901 and 1911 to refined sugar for Germany figures for 1871 and 1881 refer to raw and other figures to refined sugar This table was compiled from the Statistical Abstract of the United States Statistical Abstract of the United Kingdom Annuaire Statisque (France) and Statistiche Jahrbuch fur das deutsche Reich (Germany) Those interested may also consult Bull. U S Dept. Agriculture No 66 March 10 1914

[5] Skaller Berl klin Wchnschr 1915 lii 105

[6] Deeks W E New York Med Jour Nov 30 1912

Remarks on Treatment—Neutral sodium citrate, 3 grains to each ounce of milk, may be given to prevent curd formation in the stomach

Give ½ to 1 teaspoonful of alkaline powder (usually magnesium oxid 5, bismuth subcarbonate 5, sodium bicarbonate 20) after each feeding at 6 a m and 10 p m

The albumin water contains white of one egg flavored with orange or lemon juice, with no sugar

If a taste of the milk remains in the mouth, use a weak borax mouth wash after each milk feeding

If patient has been starved, give proctoclysis daily, by drop method, of 1 quart tap water containing 1 ounce dextrose

TABLE 2—ULCER FEEDING SCHEDULE

Day	Diet and Frequency	Time	
		A M	P M
1st	Milk 2 ounces every 2 hours	6	8
	Albumin water 3 ounces every 2 hours	7	9
2d	Milk 2 ounces cream, 1 ounce every 2 hrs	6	8
	Albumin water, 3 ounces every 2 hours	7	9
3d	Milk and cream as above every 2 hours	6	8
	Albumin water as above every 2 hours	7	9
	One soft boiled egg with feeding at	7	7
4th	Milk and cream as above	6	8
	Albumin water as above	7	9
	One egg as above with feeding at	7	7
	Soft well cooked cereal 3 ounces with feeding at	8	2
5th	Milk and cream as above	6	8
	Albumin water as above	7	9
	One egg as above with feeding at	7	1 and 7
	Cereal as above with feeding at	8	2
	Purée 3 ounces with feeding at	12 M	6
6th	Milk and cream as above	6	8
	Albumin water as above	7	9
	One egg with 2 slices bacon with feeding at	7	1 and 7
	Cereal as above with feeding at	8	2 and 8
	Purée as above with feeding at	12 M	6
7th	Repeat above and 3 ounces broth with feeding at	10	4
8th	Same as seventh and broth with feeding at	10	4 and 10
th to 14th	Same as eighth and ½ slice toast with three feedings Custard 3 ounces may be substituted for one or two milk or albumin water feedings if desired		

Butter may be added to cereal or egg if desired

Avoid much sugar in preparation of custard

Puree refers to pea, spinach or corn ('Kornlet")

Cereal refers to Cream of Wheat, Ralston's, boiled rice or Farina (measured after cooking)

Broth refers to chicken, oyster or clam

Bacon should be fried crisp

If retention of food exists lavage stomach one hour after last feeding at night

Take weight of patient every alternate day

It is obvious that in extensive ulcer areas involving the lesser or greater curvature with hour-glass constriction, a medical cure may not be secured, but since most of these are the result of a spasmodic indrawing of the curvature opposite the ulcer, relief is many times as adequately secured by the medical cure as by surgical intervention, since the spasm diminishes in direct ratio to the protection given the ulcer This may not be true in chronic ulcers with undermined edges or of course in those with definite scar tissue formation It has been surprising, nevertheless, to note the relief obtained in those patients manifesting symptoms of long-standing pyloric obstruction in whom scar tissue contraction was suspected but which, from the results obtained, could have been nothing more than edematous infiltration of the pyloric ring incidental to spasm

Gastro-enterostomy, so frequently performed in such patients, does not give any more adequate results In fact, unless performed for the relief of perigastric adhesions or perigastric abscess, the result of an earlier walled-off perforation, or for severe hemorrhage, which is rarely necessary, or following partial resection or excision of an area suspected of being carcinomatous, the operation will probably be less and less indicated During the past five years it has been necessary to have gastro-enterostomy performed in only two patients, in one of whom with extensive ulceration near the pyloric ring it was difficult to secure cooperation in the medical cure, in the other the operation was advised and performed on a young man in the ward for long-standing hematemesis, which seemingly could not be controlled At the operation no ulcer was found nor could the bleeding point be located The end-result in both instances was satisfactory

In brief, while the short loop posterior gastro-enterostomy has given good results in securing relief from the symptoms present in ulcer, no adequate method of pyloric closure has yet been devised which prevents the food from passing through the pylorus after the ulcer has healed The operation has merely given more adequate drainage and diverted the stomach contents from the ulcer area until healing has taken place The tendency to heal is always in evidence and will occur in most instances if constant irritation of the ulcer by acid chyme is prevented The opinion may be ventured that the operation would be far less popular if it was generally realized that by medical means the same results might be secured This refers as well to the so-called obstructive types, in which, under the management here emphasized, the pyloric opening has increased as the spasm decreased In the past it is safe to say that the operation of gastro-enterostomy has been frequently performed without adequate prior trial of dietetic and medical measures founded on principles now well established From the viewpoint of the physiologic principles involved should operative means be indicated, excision of the ulcer and pyloroplasty has more to commend it and will probably in the future be the method of choice

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ABSTRACT OF DISCUSSION

DR SAMUEL JAMES MELTZER, New York I have dealt with the question of sensation of the abdominal viscera at various times I have taken an interest in two questions One was concerning the sensation of pain in the abdominal viscera in general Lennander and other surgeons have put up the claim that the visceral peritoneum possesses no nerve fibers for pain It is a fact that when the abdominal cavity is opened under cocain anesthesia, the viscera can be manipulated without producing any pain to the conscious patient We have explained this fact in two ways In the first place, in all these cases cocain was used, and we discovered that cocain may have even a distant analgesic effect In the second place we have tried to show experimentally that the mere opening of the abdominal cavity is capable of greatly reducing the sensibility of the viscera The opening of the abdominal cavity also exerts a profound influence on the motility, it stops all peristaltic movements, it exerts further also an inhibitory effect on trophic functions This is illustrated by the well-known fact that the mere incision of the abdominal cavity is capable of curing tuberculous peritonitis I would remind of the further fact that exposure of the brain or of the cord is capable of abolition of sensation of these organs My second interest was concerned with the nature of pain in colic My interpretation of it was based on the so-called "law of the intestines" When *any place of the intestines is* stimulated it produces a contraction above and a relaxation below That is the normal effect of a stimulus However, in an abnormal state, it may occur that a stimulation may cause simultaneously a strong peristaltic contraction above and a constriction below the stimulus The progress of the peristalsis downward has the effect that the same mass, fluid and gas, would have to find place in a smaller volume, hence the colic I applied the same explanation to gastric colic It may occur when the strong contraction of the preantrum is progressing forward, while the pylorus remains strongly constricted

Dr Milton Howard Fussell, Philadelphia There is no easier problem to be solved than the relief of symptoms of duodenal and gastric ulcer Take a case of gastric or duodenal ulcer, whether acute or chronic, and place that patient on Lenhartz treatment, or the treatment that has been suggested here, or on any of the accepted medical forms of treatment, and in a very short time the patient will be relieved of the pain He will soon gain in weight and apparently he will be cured But simply to attack and relieve the symptoms and say then the patient is cured is a great error I believe the medical treatment of acute peptic ulcer has its place and every case should be so treated But I also believe that the chronic ulcers should not be so treated Operations now are much more valuable in chronic ulcers than is medical treatment The statistics published by the Mayos, Deaver, and others, show that hour-glass contractions, perforation, hemorrhage and carcinoma are much less common in those cases that are treated surgically, and the end results are much more frequently cures than are the results of medical treatment I have therefore come to the conclusion that every individual who has a chronic gastric or duodenal ulcer is no longer a medical but a surgical case and should be treated by a skilled surgeon When the operation is done I believe that patient is out of danger from carcinoma, particularly if it is a chronic gastric ulcer This cannot be said of the medical treatment of chronic ulcers

Dr Anthony Bassler, New York Since about one half of the cases of gastro-duodenal ulcers have a subnormal or absent acidity, then the pain is motor rather than sensory, thus I think the points raised are well taken On this basis the relief of the subjective symptoms, by lowering peristalsis with alkalies, should prove of value Also, when an excision of the ulcer, or a gastro-enterostomy is done, there is a distinct lessening of the motility of the stomach for a time There is an interference accomplished by the operation which causes a lowered status of motility I am not arguing in opposition of drainage, as a factor in operation, but in favor of relief of pain Without wishing to criticize the carbohydrate diet in a personal way I believe that the benefits accomplished in hyperacidity or in ulcer are not so much due to any restriction of the carbohydrates as to the restriction of all food constituents It makes little difference whether we restrict the proteins or the carbohydrates The main thing is that the majority of hyperacidity patients eat themselves into hyperacidity, leaving out the neurologic and psychologic cases The restriction of carbohydrate and the normal amount or lesser amount of protein makes little difference in the end The main thing is that the diet should only be equal to the patient's individual necessities, and it is not necessary to weigh the food to accomplish this in every case

Dr J W Draper, New York The question of operation in these cases, from the surgical standpoint, is by no means decided We have recently experimented on a large number of animals, trying to find the cause of this impairment Dr Barber has shown that if a segmental resection of the stomach is made, the function afterward remains practically perfect Whereas, if a V-shaped piece is removed the function is impaired There is another point of great interest, the differential diagnosis between duodenal and gastric ulcer Carcinoma never follows ulcer of the duodenum but it does frequently follow ulcer of the stomach It is not known why this is so Hyperchlorhydria is an interesting subject It has appeared to us from a study of the biologic side that this may be a protective factor by which the organism attempts to prevent aggressions of different kinds It is unquestionably a symptom

Dr Isidor Tumpowsky, Chicago The "law of the intestines" supports our conception of gastric pain, i e, when the part above contracts and the part below fails to relax pain results When gastric peristalsis occurs and the pylorus fails to relax either from spasm or deficient neutralization of the excessive acid passed into the duodenum, pain results from increased intragastric tension The pain is accompanied by contractions Pain is not felt unless contractions are present In the quiescent periods pain is not registered This seems to point to the conclusion that tension is the cause of the gastric pain

Dr Willard J Stone, Toledo, Ohio I believe it is up to the surgeon who advocates gastro-enterostomy without appropriate prior medical treatment to prove that there is no impairment of stomach function after this operation The vast majority of gastric and duodenal ulcers are amenable to medical treatment by the methods outlined by Sippy and Lenhartz or by the plan here suggested If, a reasonable length of time after the so-called medical cure has taken place with the patient free from symptoms, there is a recurrence, we may then consider the possible necessity of operative procedures The point I wish to make is that many gastro enterostomies are being performed today without efficient prior medical treatment

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SYPHILIS AS A PROBABLE FACTOR IN VAGUE STOMACH DISORDERS *

CABOT LULL, MD
BIRMINGHAM, ALA

Hospital and private case records show stomach troubles as the chief or presenting symptom in a very large percentage of all patients In many others, while not the chief complaint, it figures prominently in the chronicle of their troubles

The former presumption of guilt on the part of the complaining stomach led to many fine-spun diagnoses to fit elaborate classifications The more recent view of innocence on the part of the stomach until guilt is proved makes for greater thoroughness in the search for causes of symptoms both intragastric and extragastric

It is not difficult to understand why the stomach protests so frequently and so emphatically against disturbances originating outside itself when we recall the embryologic relation of the whole alimentary apparatus with its common innervation by branches of the vagus and great sympathetic abdominal plexus

This provides a mechanism so marvelously delicate as to respond to the slightest stimulus either psychic or somatic, for example, the sight or odor of appetizing food producing gastric secretions or the reflex irritation of a chronic appendix causing regurgitation of food

The problem of determining and separating the two classes, those in which the lesion is in the stomach (organic) and those in which this organ suffers reflexly or vicariously (functional), has been greatly simplified by improvement in diagnostic methods in general, enabling the more certain recognition of all extragastric diseases But of far greater value have been the roentgenologic studies of the gastro-intestinal tract and of surgical pathology after exploratory laparotomy

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* Read before the Section on Practice of Medicine at the Sixty Seventh Annual Session of the American Medical Association, Detroit June 1916

Notwithstanding these methods for thorough sifting, there is still too large a class of so-called functional diseases of the stomach which in reality is made up largely of sufferers from visceroptosis, pyogenic infections, early myocardial or valvular disease, hyperthyroidism, latent tuberculosis and syphilis

There is a rapidly growing literature of organic syphilis of the stomach, diagnoses now being based on positive clinical Roentgen-ray and serologic findings, in spite of the contention of pathologists that the disease is rarely demonstrable in tissue examinations after operation or post mortem

The acceptance as bona fide gastric syphilis of cases in recent reports by Smithies, twenty-six cases, Eusterman, twenty-one cases, Downes and LeWald, eight cases, Morgan, seven cases, all based on clinical, Roentgen-ray and serologic findings, will lead us to expect from other workers a great many cases of the same character On the other hand, fewer could be accepted as undisputed stomach syphilis, if all cases were to conform to the requirements laid down by Chase, namely, a positive Wassermann, evidence of syphilis elsewhere in the body, demonstration of lesions in the stomach by Roentgen ray, and finally, therapeutic improvement

A question of great theoretical interest as well as practical importance is how we shall classify cases which meet only the first and last of these requirements, that is, those with stomach disorders showing positive Wassermanns in which all symptoms are relieved by antisyphilitic treatment

In the light of the newer pathology syphilis may be said to affect the stomach in some one or all of the following ways (1) by producing gumma, erosion or endarteritis in the organ itself, (2) by causing demonstrable structural changes in other organs closely situated anatomically or allied in function to the stomach, (3) by producing changes not recognizable histologically, but due to spirochetal action direct, or through the agency of its toxins on the stomach itself, on the general nervous system, or on the blood

In the case of the first two groups, that is, cases in which gross structural changes are presented, the striking and urgent character of the symptoms and physical findings usually lead to the employment of the Roentgen ray, the Wassermann reaction and often to surgical operation The very gravity of the symptoms is the salvation of these patients

Unfortunately the third group of cases, showing no gross changes in organs, presents manifestations of such mild and varied character, often in so many different parts of the body, that the stomach symptoms may at times be obscured by other features and the general impression of nervous instability leads one to brand the patient as neurotic or as having nervous dyspepsia Boas says

> By nervous dyspepsia the authors who have paid special attention to this subject, Von Leube, Stiller and Ewald understand a variety of conditions Nervous dyspepsia is not a disease but a symptom complex in which organic changes connected directly with the digestive organs may be detected or absent

The idea of syphilis as a cause of functional gastric disorders is by no means new, as evidenced by many older textbook statements, for example, Hyde, so long ago as 1888, said "It should not be forgotten that a long list of functional disorders of the alimentary canal might be enumerated as of occurrence in the syphilitic subject which are often due to the toxic influence of the disease (cachexia, etc)"

Before the discovery of the spirochete and the complement fixation test, the diagnosis of syphilis as a cause of these disorders rested on the history, with its usual denial of infection, on very uncertain physical evidences and finally on the therapeutic test Since the discovery of these most positive evidences we have been compelled to acknowledge the disease as exceedingly common in all grades of society and very often nonvenereal in the method of its acquirement Though still "visited as an iniquity of the fathers upon the children," it no longer carries the moral damnation of original sin

This radical change in mental or moral attitude toward syphilis has put medicine forward a tremendous stride As matters now stand, the demonstration of the presence of active syphilis depends on obtaining a positive Wassermann reaction on the blood or spinal fluid, and hence the performing of routine tests on all medical cases, especially those with stomach symptoms, becomes most desirable A few statistics of such examinations from recent literature offer some variable but suggestive results Horner in 500 cases finds positive 13 8 per cent, Moore in 418 cases finds positive 13 4 per cent, Edsall in 1,696 cases finds positive 9 4 per cent, and forty-six of the latter had gastro-intestinal symptoms

In the discussion of his figures Edsall remarks that "the most striking fact brought out is the much greater frequency of gastro-intestinal manifestations (not gastro-intestinal syphilis) than we have thought till recent years"

The group of vague gastric disorders in which syphilis is believed to be concerned is largely made up of congenital cases lacking the classical picture of the disease and hence unrecognized and untreated, congenital or acquired cases suspected and insufficiently treated, and acquired often nonvenereal syphilis, of a mild type because of a weak strain of infecting organism or unusual resistance of the patient All of these types were formerly called merely latent syphilis

Since Warthin finds spirochetes in cardiac muscle as well as in other organs which show no lesion, "which according to the older knowledge would be classed as syphilitic," we may accept his theory for the periods of latency in persons who, though free from symptoms for decades, show abundant organisms in their tissues He assumes that a symbiotic relation exists between the organisms and the body cells

This view accords with the conclusions of Nichols and Hough, from experimental data, that "syphilis is not to be thought of as a chronic septicemia extending over years, but rather a complex of local infections which date back to an early septicemia and the character (strain) of spirochete eventually determines the picture of the disease"

This view of latency, as symbiosis, would explain more satisfactorily such phenomena as the late (parasyphilitic) manifestations and the negative complement fixation test which becomes positive after provocative doses of antisyphilitic remedies As to the exact method by which gastric symptoms are produced in syphilis without demonstrable lesions of the stomach we can at present only speculate If we exclude from consideration cases with definite lesions of the central nervous system, two ways seem possible, either by the actual localization of spirochetes in the stomach or through absorption and circulation of toxins in the blood The latter would seem analogous to the early gastric disorders seen in pulmonary tuberculosis, in which no lesion of the stomach exists

A vast amount of work must yet be done to clear up the pathology of syphilis and establish the Wassermann, luetin and various spinal fluid tests on an entirely satisfactory basis But the application of our present knowledge is revolutionizing internal medicine and enabling us to save many syphilitic gastric patients from years of unnecessary suffering, surgical tampering or even worse fates

Herewith are appended case reports believed to be illustrative of some of the types discussed

CASE 1 —White, married man, 36 years old, complained that for five weeks he had had "stomach trouble" nearly continuously From three to four hours after a meal, especially if he had exercised much, he felt a considerable pain in his stomach This pain remained localized, not radiating, and was relieved on taking any sort of food He believes the pain was worse after a heavy than after a light meal He did not vomit, nor did he have heart burn or eructations The bowels were somewhat constipated His weight was off from 12 to 15 pounds

His trouble was diagnosed as syphilitic gastric dyspepsia and progressive tabes

The history shows that this man has had a facial paralysis for nine years and that he had something like syphilis a few weeks preceding its development The treatment he received was the usual hot springs vacation with very casual dosing for a few weeks with a liquid containing mercury and potassium iodid

About one year later, or Sept 25, 1907, he consulted me because of pain and fulness in his stomach, coming on an hour or two after eating His bowels were regular He had lost 25 pounds in a year

Examination then showed right-side facial palsy, negative heart, lungs and abdominal viscera, urine containing a few hyaline and granular casts The blood was negative to ordinary tests, the Wassermann not being then in vogue

Examination of stomach contents, which was then very much in vogue, showed after an ordinary Ewald meal total contents 90 c c, hydrochloric acid 16, total acid 25 From these findings it was thought that no serious stomach disorder was present, in other words, our old friend, "neurosis or purely functional" was chosen for a diagnosis, and the patient was advised to feed up and renew his antisyphilitic treatment and report in ten days He was not seen again till 1910, three years later, when he was much improved, but still had his facial paralysis

A few weeks ago he returned complaining that for five weeks he had pain after meals, as already described The periodicity and general character suggested duodenal ulcer, but there being no demonstrable blood in the stools and no abdominal tenderness, this diagnosis was held in abeyance

He was found to have delayed right patella reflex and slight Romberg The Wassermann reaction was three plus positive Examination of eye grounds and auditory nerves preliminary to giving salvarsan was made and it showed defective hearing in both right and left ears and marked arteriosclerotic optic disk

In view of these changes and the risk involved in large dosage of arsenic, we decided on slower treatment, and accordingly he was given mercury salicylate intramuscularly with increasing doses of potassium iodid Following marked improvement in the eye and ear conditions, he was later given arsenobenzol

No direct attention has been paid to the stomach disorder except for some suggestions as to diet and laxatives The improvement in the patient has been very marked, the stomach symptoms having entirely cleared up and though he still has a long way to travel, I hope the syphilitic condition may be arrested and further damage to the gastro-intestinal tract and nervous system be averted

CASE 2 —American woman, married, 33 years old, presented as the principal complaint these facts For about four or five months had had severe pain in the stomach region and also in the right thorax She had a feeling of "rawness and soreness" in the stomach and suffered from nausea and vomiting when the stomach was empty She had on two occasions vomited blood, which was at one time bright red and at another dark, there being 1 to 2 ounces each time A week before she had passed some pus and blood in the stool She had a poor appetite and was constipated Having lost 20 pounds and much strength, she was bedridden and greatly depressed mentally Another condition which was thought possibly to have some relation to the stomach trouble was excessive uterine flow at times, both metrorrhagia and menorrhagia, with moderate leukorrhea

Her case was diagnosed as stomach ulcer, probably gumma

Some other points of interest in the history are that she had pneumonia followed by pleurisy thirteen years before and mild attacks of pleurisy every winter following Up to six years before she also had bronchitis every winter She had one living child and no history of miscarriages Her husband is in excellent health, having no suspicion of syphilis

The examination shows a thin anemic woman with signs of old pleurisy at the right base, a very tender resisting area in the left upper abdomen above and to left of the umbilicus, in other words about over the stomach

She has a moderate secondary anemia with hemoglobin 55, 4,600,000 red cells, 5,500 white, blood pressure 108 and 80 mm of mercury, urine negative, stool with no occult blood and no ova

The examination of the uterus showed an enlargement of this organ with an eroded, easily bleeding cervix and a small mass in the posterior cervical lip

The general picture here presented suggested strongly carcinoma of the uterus with probable metastasis in the gastro-intestinal tract The patient was seen by Dr L H Watkins, who diagnosed an acute endocervicitis It was decided to take her to the hospital and examine the cervix further, making a microscopic examination of the tissue, and study further the stomach condition by means of the Roentgen ray

The Roentgen ray showed both with fluoroscope and plate a definite lesion (probable ulcer) on the lesser curvature immediately beneath the tenderest point on the abdomen The characteristic incisura in the greater curvature directly opposite was also noted with a stoppage of the bismuth and with a ragged appearance at the point of suspected ulceration

Further examination of the uterine condition by Dr Watkins confirmed the diagnosis of endocervicitis, probably of Neisser type The Wassermann reactions, made by two careful observers independently, were both positive, three plus

The usual ulcer diet and regimen were instituted and a few days later the patient was given 0 6 gm of salvarsan She has since been on mercury by intramuscular injections and potassium iodid Some little attention has of course been paid to diet, laxatives and medication, but the marked and prompt improvement noted and which is continuing both in the behavior of the stomach and in the general condition together with a gain of 40 pounds in weight and a clearing up of the anemia, we believe has been largely due to antisyphilitic treatment

CASE 3 —An American mechanic, 27 years old, had stomach trouble, weakness and "generally down-and-out feeling for three or four years" He felt so bad that he was unable to work except a day or two a week

Three years before, after much treatment by different doctors, the inevitable happened, his appendix was removed by a surgeon who told him it was chronically inflamed and was the cause of all his digestive disturbance

The symptom complained of at that time and which persisted after his separation from his appendix were heaviness in the epigastrium, with much distention with gas, constipation and dizziness On careful inquiry into the history it was found that he had a definite, typical syphilitic infection in 1907 just eight years before Following this he took about six months' internal treatment Again three years before he took salvarsan intravenously Up to the time of examination there had been no particular change in the gastro intestinal or general condition

This patient was sent to the hospital May 24, 1915, for study, and it was found on Roentgen-ray examination that, aside from a redundant sigmoid, there was no pathologic condition present in the alimentary tract, the stomach itself being absolutely normal

A diagnosis of syphilitic gastric dyspepsia was made

A Wassermann reaction made on entrance showed moderately positive, two plus The blood findings aside from this were not striking The urine, blood pressure and general physical examination were negative The stool showed no occult blood No gastric analysis was made

On May 31, 1915, the patient was given salvarsan and a week later intramuscular injections of mercury were begun, followed in the intervals with potassium iodid This man has now been under observation more than a year and is quite well of his stomach trouble

SYPHILIS IN THE SOUTHERN NEGRO*

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The question of the prevalence of syphilis among the negroes of the South has, until recently, been the subject of much discussion and conjecture, but of little scientific investigation

It is the belief of the majority of physicians working among the negroes in the South that a great percentage of them are syphilitic[1] On the other hand, it is the belief of other clinicians, working among a better class of negroes, especially in the North, that such an estimate is not correct[2] Most of these estimates, however, are based solely on clinical observations and not on systematic and strictly scientific investigations

The results of the few systematic attempts at the solution of this question regarding the prevalence of syphilis among the negro population of the South have been somewhat contradictory Hindman[3] has reported 16 per cent of infections as determined by routine Wassermann reactions, among 255 male negroes and the same percentage among 218 female negroes incarcerated in the Georgia Insane Asylum Ivey[4] reports 25 per cent of 357 male insane negroes, and 29 per cent of 349 female insane at the Mt Vernon Insane Asylum of Alabama, as having positive Wassermann reactions Lynch[5] reports 65 per cent of negro women, and 53 per cent of negro men, applying at the outclinics of Charleston, S C, for treatment, as having positive Wassermann reactions Unfortunately, however, Lynch's series of tests is limited to only 102 in all Wilson,[6] in a series of tests done on seventy-six healthy negro girls in an orphan asylum of Baltimore, found 7 8 per cent to have a strongly positive Wassermann reaction

As a result of this very decided variation in the figures of various observers, it has seemed to us that a systematic and more or less extensive series of observations as to the prevalence of syphilis among the negroes would not be out of place

The work which we are to report was carried out on negroes in the city of Galveston The majority of the negroes examined were of the laboring class, being for the most part dockworkers, longshoremen, sailors and common laborers, with their wives and families

The reactions which we have employed in the attempt to detect syphilitic infection were the Wassermann and luetin tests The Wassermann tests were done after the modification of Noguchi, using liquid reagents, however, instead of paper The luetin tests were done in the ordinary manner, 0 07 c c being given intradermally All tests were carried out in the medical clinics and laboratories of the University of Texas, Department of Medicine, the blood of each negro admitted to the wards of the John Sealy Hospital, regardless of service to which admitted, being taken as soon after admission as possible and the luetin reaction being given at the time the blood was taken No Wassermann or luetin reaction was considered positive unless the reaction was an undoubted positive, doubtful reactions being considered negative Only Wassermann reactions of one plus (50 per cent) or more fixation were considered positive, the classification of Craig being used[7] All tests were done in the same laboratory and interpreted by the same observer

The series which we have examined in the above manner consists of about 1,200 adult negroes, fifteen years of age or over On 600 of these negroes both the Wassermann and luetin reactions could be successfully followed, while in the remaining 600, only the Wassermann reaction could be obtained Among the latter 600 patients, however, are included all those on whom luetin reactions were done, but who disappeared from view before the reaction could be satisfactorily interpreted Also among these patients are included all those having had potassium iodid in any amount before the interpretation of the luetin test, for there seems to be no doubt, in our experience, that a positive luetin can be produced at will on nonsyphilitic individuals, by the previous administration of the iodids in sufficient quantities

Of the 1,200 negroes examined in this manner, 34 per cent gave definite positive Wassermann reactions Of the 600 negroes on whom both Wassermann and luetin reactions were done, 35 per cent gave definitely positive Wassermanns, and 18 per cent gave positive luetins, while the total percentage giving positive reactions to one or both of these tests was 42 per cent, 7 per cent giving positive luetins with negative Wassermanns Such statistics as these are of comparatively little real value, however, in arriving at a true idea as to the actual prevalence of syphilis among a race of people It is a well-known fact that the percentage of syphilis among patients applying to clinics for treatment is always much higher than among the healthy working classes, so that, before drawing any conclusions as to the actual prevalence of this disease, as well as its actual relation to sickness and death, it becomes necessary to determine the percentage of healthy and robust negroes who are infected with syphilis

In order to determine, therefore, the actual prevalence of syphilitic infection in the healthy working negro, we have made an especial study of some 200 such persons Among these are included all negroes admitted to the surgical wards of the hospital, suffering from accidental injuries, such as broken legs, cuts, stab wounds, burns, etc Particular care was taken in selecting these negroes to rule out all who were otherwise diseased or disabled than from their injury Along with these cases were included, also, a small number of normal obstetric cases Of these various, apparently normal cases, 24 per cent, approximately, gave positive Wassermann reactions, 12 per cent gave positive luetin reactions and 28 per cent gave positive reactions to either the Wassermann or the luetin tests

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* From the Medical Department of the University of Texas Department of Medicine.

* Read before the Section on Practice of Medicine at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

[1] Murrell, Thomas W discussion on Kingsbury, Jerome and Brecht Paul E The Intravenous Administration of Mercury in Syphilis The Journal A M A Aug 15 1914 p 565 Martin South Med Jour, 1914 xii 466 Terry South Med. Jour 1914 xii 458

[2] Hazen H H Syphilis in the American Negro The Journal A M A Aug 8 1914, p 463

[3] Hindman Am Jour Pub Health 1915 v, 218

[4] Ivey Med Rec New York, 1913 lxxxiv, 712

[5] Lynch South Med Jour, 1915 viii 450

[6] Wilson New York Med Jour 1916, ciii, 585

[7] Craig Am Jour Med Sc., 1915, cxlix 41

In order to determine, moreover, what percentage of syphilis might be hereditary among the negroes and what acquired, we attempted a very limited study of negro children, ranging in age from 1 year to 12 years, in whom it was presumed that any syphilitic infection must be inherited These children were, however, admitted to the hospital complaining of some ailment, either medical or surgical, so that the figures which we have obtained are probably somewhat higher than would be met with among absolutely healthy negro children They are sufficient, however, to show that the majority of the cases of syphilis among the negroes are of the acquired type, nature, fortunately, taking care of many of the patients with inherited syphilis by affording them an easy death either before or immediately after birth, as well as by rendering the parents sterile Of fifty-two such examinations which we have made, we found only five positive Wassermann reactions, giving a percentage of about 9 5 In addition, however, one patient had positive luetin reaction with a negative Wassermann, making the percentage slightly higher

Of greatest interest to us, as clinicians, was the study and analysis of the incidence of positive Wassermann and luetin reactions among patients suffering from the various common diseases This subject we hope to take up in more detail in a paper to be read elsewhere, but a brief summary of our findings would, perhaps, not be inappropriate here

Taking up first the purely medical cases, cases admitted to the medical wards of the hospital, we find that we have some 400 in our series Of these, about 40 per cent gave definitely positive Wassermann reactions Adding to this percentage those cases which gave positive luetin reactions with negative or doubtful Wassermann reactions (twenty-one cases), we have a total of 45 per cent giving strong laboratory evidence of the existence of syphilis Analyzing the incidence of positive reactions in the various common diseases, we find that such diseases can be readily grouped into three divisions, from the standpoint of syphilitic infection First, we have those diseases which seem to have no direct connection with syphilitic infection, since the incidence of positive reactions in these is remarkably constant, ranging always somewhere around that percentage which we have found to be usual in healthy negroes Next, there is a group of diseases in which the incidence of positive reactions is somewhat higher, suggesting that while perhaps syphilis is not a direct cause of the disease, or at least not the sole cause, nevertheless, syphilitic infection must be a contributing factor toward its occurrence Finally, we have certain diseases in which we have learned to predict a positive reaction in almost every instance, diseases which are certainly caused by previous syphilitic infection

Among the first group of diseases, which, apparently, have no connection, either direct or indirect, with syphilis, and comprising some 200 cases in all, we find the following diseases, all showing an incidence of positive Wassermann reactions of somewhere around 30 per cent pulmonary tuberculosis, sixty cases, with 23 per cent positive Wassermann reactions, typhoid fever, thirteen cases, 22 per cent positive Wassermann reactions, malaria, seven cases, 12 per cent positive Wassermann reactions, pneumonia, thirty cases, 30 per cent positive Wassermann reactions, dysentery, twelve cases, 20 per cent positive Wassermann reactions, pellagra, twenty-two cases, 13 per cent positive Wassermann reactions, cancer, 17 cases, 12 per cent positive Wassermann reactions, chronic interstitial nephritis, four cases, 25 per cent positive Wassermann reactions, and arteriosclerosis, eighteen cases, 23 per cent positive Wassermann reactions

Still other diseases, mentioned above as perhaps indirectly associated with previous syphilitic infection, have shown constantly a rather higher percentage of positive reactions than we have learned to consider normal for the negro The most striking type of disease of this second class is a form of diffuse nephritis to which the negro of these parts seems peculiarly susceptible We are, all of us who work in the South, acquainted with the common "dropsy," which is so well known to the darkies themselves This disease is manifested clinically by a massive anasarca, by dyspnea, by cardiac irregularities, hypertrophy and dilatation Usually the disease is rather rapid in its course Pathologically, an acute or subacute diffuse nephritis is usually found, involving as a rule both glomerular and tubular elements of the kidneys Excluding all cases of pure chronic interstitial nephritis and all cases of renal sclerosis, we have studied sixty cases of this diffuse nephritis Of these, twenty-five gave negative reactions, twenty-four gave positive reactions, and eleven gave doubtful reactions Of the latter giving doubtful reactions, five gave positive luetin reactions, making twenty-nine cases in all giving positive reactions to one of these tests, a percentage of 48 per cent positives as against only 40 per cent clear-cut negatives

Still another affection common to the negroes, as all who work among them are aware, is a spastic paralysis or paresis, occurring especially in young or middle-aged negroes, often of one limb or group of muscles, but still more frequently, perhaps, involving more than one group A certain number of such cases are, of course, purely arteriosclerotic in origin, but that a large percentage of them are syphilitic is shown from the fact that out of thirty-four of such patients studied in this series, 50 per cent gave positive Wassermann reactions The majority of those giving positive Wassermann reactions, moreover, gave positive reactions in the spinal fluid also

Another disease which would seem to be connected with syphilitic infection in some way, although not certainly caused solely by that infection, is myocarditis From this group we have excluded as far as possible all cases of myocarditis complicated by valvular lesions of an organic nature, also all cases complicated by nephritis Twenty-one such cases were observed Of these, eight, or 40 per cent, gave positive Wassermann reactions, three, or about 10 per cent, were doubtful, and 50 per cent were negative

Cirrhosis of the liver, usually, among the negroes, consisting of a large, hard and tender liver, would seem to be largely specific in origin, since out of six cases observed, four gave strongly positive Wassermann reactions

Of the third type of disease common among the negroes, but which is almost constantly associated with a positive Wassermann reaction, aneurysm of the thoracic aorta is a good example Of twelve such cases in this series, ten gave definitely positive reactions, one gave a doubtful and one a negative reaction Three cases of abdominal aneurysm were studied Only one of these gave a positive Wassermann reaction Two were negative both to Wassermann and luetin reactions One carotid aneurysm gave a positive reaction, one femoral a negative, and one iliac a negative reaction

Twenty cases of aortic insufficiency were observed in this series Fifteen of these, 75 per cent, gave positive Wassermann reactions and 85 per cent gave positive reactions to either Wassermann or luetin tests

One other disease stands out prominently among the medical cases as being commonly associated with positive reactions for syphilis This is a mild type of bone pain, usually called rheumatism or lumbago by the sufferer, characterized clinically by bone or joint pains, without, however, any redness, swelling or deformity There is usually no rise of temperature A very characteristic point in the history is the fact that the pains are usually worse at night Headache is apt to be a complication Joints are especially apt to be affected, although the long bones are not infrequently involved, as well as the ribs, spine and skull Local tenderness is not marked as a rule Such cases are exceedingly common in our clinics, especially in the outclinics Of thirty such cases studied twenty-five, or about 80 per cent, gave strongly positive Wassermann reactions, and 84 per cent gave either positive Wassermann or positive luetin reactions

OCCURRENCE OF SYPHILIS IN THE COMMONER DISEASES, AS DETERMINED BY POSITIVE WASSERMANN REACTIONS ON THE NEGRO

Disease	No Cases	Per Cent Positive Wassermann
Apparently healthy adult negroes	200	24
Negro children	52	9 5
Pulmonary tuberculosis	60	23
Typhoid	13	22
Malaria	7	12
Dysentery (amebic and bacterial)	12	20
Pneumonia	30	30
Pellagra	22	13
Cancer	17	12
Arteriosclerosis (or senility)	18	23
Chronic interstitial nephritis	4	25
Diffuse nephritis (often subacute or acute)	60	48
Paralysis	34	50
Myocarditis (uncomplicated by organic valvular lesions or by nephritis)	21	40
Cirrhosis of liver	6	66
Aneurysm of thoracic aorta	12	83
Aortic insufficiency	20	75
Syphilitic bone or joint pains	30	80
Rectal abscess	4	75
Rectal stricture	10	90
Rectal fistula	13	61
Hemorrhoids	9	22
Chronic leg ulcer	18	55

A study of Wassermann reactions done on negroes admitted to the surgical wards of the John Sealy Hospital, about 300 cases in all, shows a lower incidence of positive Wassermann reactions than on the medical wards, only 34 per cent of these giving positive Wassermann or luetin reactions, as distinguished from 45 per cent of positive reactions obtained on the medical service Only three diseases stand out prominently among the surgical cases as being especially associated with positive Wassermann reactions The most striking of these is the well-known "rectal trouble" of the negro These rectal troubles are found on investigation to be of five kinds, namely, hemorrhoids, fistula in ano, perirectal abscess, stricture of the rectum and chondromas With the exception of those patients suffering from hemorrhoids, nine of whom were examined, with an incidence of positive Wassermann reactions of only 22 per cent, all of the remainder of these rectal troubles would seem to be closely connected with syphilitic infection, since out of thirteen patients with rectal fistula, eight, or 61 per cent, gave positive Wassermann reactions, of four with rectal abscesses, three gave strongly positive reactions and one a doubtful reaction, and of ten with strictures of the rectum, nine gave strongly positive Wassermann reactions It would seem, therefore, that rectal trouble in the negro is strong presumptive evidence of syphilis

One other surgical disease standing out prominently in our series as being frequently associated with positive Wassermann reactions is the chronic leg ulcer Out of eighteen such cases, ten gave positive Wassermann reactions (55 per cent), and one a doubtful reaction Finally, of seven cases of periostitis observed, three gave strong positive Wassermann reactions, one a doubtful, and three a negative reaction

Of 200 gynecologic cases examined, 29 per cent only gave positive Wassermann reactions Among the gynecologic cases, no particular disease has been peculiarly associated with positive reactions Out of thirty-two obstetric cases, ten gave positive Wassermann or luetin reactions, a percentage of 30 Only three miscarriages were observed among these Two of these miscarriage cases gave positive reactions and one a negative

In a study such as this one of the prevalence of syphilis in any particular class of individuals dwelling in a community, it is of course important to determine, if possible, the incidence of the same infection among the other classes of the same community Such a determination among the white patients admitted to the wards of the John Sealy Hospital, in a limited number of cases only, however, has been done Before reporting the results of this investigation it would perhaps be well to say a few words in explanation of the class of white people on which this work was done We treat in the wards of the John Sealy Hospital two entirely different classes of persons On the one hand, many are small shopkeepers, farmers from the surrounding territory, clerks, tradesmen, etc On the other hand, a large number are of the so-called lower classes, including sailors, longshoremen, common laborers, and, finally, the human derelicts or the dregs of social life

The incidence of syphilitic infection among the better classes of these patients, taken as a routine on admission, would seem to be considerably lower than that among the negroes, averaging somewhere about 20 per cent (fifty cases only) On the other hand, the incidence among the latter class of patients, those at the bottom of the social scale, differs very slightly from the incidence found among the negroes of the same class, averaging about 30 per cent (fifty cases)

Finally, in a series of Wassermann tests done on about fifty healthy medical students, the tests being done in a routine manner, without selection, we have not yet found a definitely positive reaction

CONCLUSIONS

The conclusions which we feel that we can draw from this work are as follows

1 The incidence of syphilitic infection among apparently healthy adult negroes in this community varies between 25 per cent and 30 per cent

2 The infection is largely acquired, since it is much lower in incidence among children under the age of puberty

3 The incidence of syphilitic infection among sick negroes is considerably higher than among the well, averaging between 40 per cent and 50 per cent

4 Certain diseases seem to be directly connected with previous syphilitic infection, as shown by extremely high incidence of positive reactions In other diseases, moreover, syphilis, although apparently not being the direct, or at least the sole cause of the disease, would seem to be connected with its occurrence in some way, chief among these being the characteristic form of acute or subacute diffuse nephritis, which is one of the most common causes of death among the negroes

5 The occurrence of syphilis among white people of the same social class as the negroes would seem to be about the same as that among the negroes In the better classes of white people, however, the occurrence is much less, while in the best classes (young and healthy medical students), it is almost nil

6 Syphilis is undoubtedly one of the chief causes of death and disease among the negro, ranking as high or higher than tuberculosis, Bright's disease and pellagra, which are the three other chief causes of death and disability among that race in this community

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS LULL AND M'NEIL

Dr Frank Smithies, Chicago The subject of visceral syphilis is in evolution The earlier pathologic studies are incomplete Dr Warthin of Ann Arbor has demonstrated in the pancreas lesions similar to those found in the aorta and myocardium He also demonstrated spirochetes in the pancreas parenchyma It would seem that we must cease to regard syphilis as a dermatologic ailment but consider it broadly as a spirochetemia We cannot state that the syphilitic virus, the spirochete, does not lodge in the wall of the stomach or other hollow viscera It is extremely likely that it does Its lodgment there is probably delayed on account of the active motility of the stomach, and added vascular protection We should not wait for the development of a tumor or malformation before classing lesions as syphilitic Such are terminal affairs In all cases of chronic dyspepsia one should make a Wassermann test not only of the blood serum but of the spinal fluid as well A positive reaction should always be confirmed by a second test We do not think that the luetin test is a reliable clinical guide as to the presence or absence of syphilis If one approaches the subject of visceral syphilis from this standpoint he will be surprised at the comparatively large number of cases that come in diagnosed "dyspepsia" which will reveal some venereal history which has been forgotten or hidden and in which positive serum tests are obtained In some instances the disease may be congenital In syphilitic cases the clinical manifestations are very similar to those of dyspepsia from other gastric lesions One should not wait until tumor deforms the stomach before suspecting syphilis When tumor has developed it indicates the end of the story Gastritis, ulceration or cirrhosis usually precede tumor formation

Reports of great improvement following specific treatment of lesions which are considered syphilitic should be considered conservatively In 80 per cent of chronic ulceration of the stomach, especially in syphilitic ulcers there is a history of intermittency or 'periodicity" Favorable intervals often occur whether or not treatment is instituted Out of 33 cases of visceral syphilis in my series only five can at present be considered clinically well In seven cases there was no improvement

Dr Fenton B Turck, New York Gumma of the stomach is an unusual lesion and the number of cases of demonstrable gummas interfering with gastric function is very small On the other hand, a large number of syphilitics have stomach disorders sometimes of a very distressing sort In common with other general diseases, syphilis can be manifested by gastric symptoms quite apart from any local syphilitic lesion Since syphilis is recognized as a spirochetemia, not essentially unlike an invasion of the blood stream by bacteria or plasmodia, the resultant effects are very similar to those of chronic malaria, tuberculosis or low grade systemic infections Some years ago a physician in Texas made a special report to me on gastric symptoms in chronic malaria His figures proved the same insufficiency of motility with stasis of stomach contents as is found in tuberculosis and syphilis The factors responsible for these symptoms are changes in nonstriated muscle as result of direct toxic influence and venous stagnation in splanchnic vessels resulting in an asphyxia of muscle cells and consequent atony These conditions were found in cases in which no obstruction was demonstrable, the histologic changes were shown in sections from the stomach wall which were taken in attempting operation for relief of gastric symptoms These microscopic changes were of a hyaline character with a degeneration of muscle cells without infiltration of the gummatous type Antisyphilitic treatment does not always relieve symptoms secondary to long standing cell poisoning, direct, systematic treatment of the stomach is indicated for reduction of splanchnic congestion and stimulation of gastric motility and secretion

SURGICAL ASPECTS OF INDUSTRIAL ACCIDENT INSURANCE

ILLUSTRATED FROM CALIFORNIA EXPERIENCE *

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Legislation embodying into laws the ideas of employers' liability, workmen's compensation and compulsory industrial accident insurance in its historical development constitutes a sociologic movement of the greatest significance and of the widest application It affects not only all communities in the states in which it has been adopted, but also all classes in those communities, profoundly influencing the cost of production of a great variety of commodities and in consequence the cost of living and material development

This latest phase of the never ending struggle between labor and capital has brought forth an entirely new conception of at least certain relations of workman and employer to each other, to industry and to the public

Because fundamentally this movement has to do with the health and physical welfare of the laboring classes, relations have developed with the medical profession in an altogether special sense Broadly speaking, the law in its present form is largely designed to afford to the injured workman the best medical and surgical service available, and this is made a matter of social economy, an entirely new sort of enforcement of a principle long recognized as to the duty of surgery to restore the injured workman to his earning capacity at the earliest possible moment I mean that the law has made it sharply to the pecuniary interest of a large body of men, the employers through the insurance carriers, to provide such surgical service for

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* Because of lack of space this article is abbreviated in The Journal The complete article appears in the Transactions of the Section and in the author s reprints

injured employees as will insure their return to productivity to the greatest degree possible and in the shortest possible time This cannot fail profoundly to influence medical and surgical practice and medical education

The problem of providing for the relief of workmen, their families, widows and orphans is a very old one, and attempts at its solution by organization date back even to the guilds of medieval Europe, but until the present movement was inaugurated, attempts at solution of the problem have always been from the standpoint of mutual aid on the part of workmen themselves or else on the basis of charity

The principle of the state assessing the employer for the cost of medical and surgical aid and monetary compensation of injured workmen, making it a matter of law and right as opposed to charity, is of German socialistic origin, the first important legal expression of the same based on older Prussian laws being the German employers' liability law of 1871

So revolutionary a principle could not be adopted except on an experimental basis, and therefore it was made applicable only to the more obviously hazardous occupations It put particularly on mine owners the burden of caring for injured employees, and was based on fault, but the burden of proof of fault bore so heavily on labor that it signally failed of its object and resulted in little more than the engendering of a prodigious number of embittering suits at law It was an entering wedge, however, and led directly to the compulsory industrial accident insurance laws of 1884

Following the lead of Germany, yet often basing their practice on different principles and with variation growing out of accommodation to laws and customs already in force and organizations already active in the same direction, all the great powers of Europe and many of the smaller states have adopted laws more or less effectively solving the problems of workmen's compensation, employers' liability and social insurance Austria in 1887, Hungary in 1891, Norway in 1894, Finland in 1895, France and Italy in 1898, Spain in 1900, Holland in 1901, Russia in 1904, Belgium, Switzerland, Sweden, Denmark, Greece, Serbia, Bulgaria, Peru and others, including even Iceland, have adopted and are enforcing such laws

England passed the employers' liability act in 1880 and the workmen's compensation act in 1897, which provided that compensation should be made by the employer to the injured workman irrespective of negligence or contributory negligence and was made to apply to most industries In 1900 the law was extended to agriculture and in 1906 to practically all persons in service Moreover, certain industrial diseases were interpreted as "accidents" within the meaning of the law The British colonies of New Zealand and those of Australia, Canada and South Africa followed suit

Beginning with Maryland in 1902, one state of the Union after another, and the federal government have enacted laws for workmen's compensation The original law in Maryland was declared unconstitutional, as have laws on this subject in other states, but by a process of experimentation and amendment, laws more or less satisfactory in solving the problems of workmen's compensation have been evolved and are now in force in thirty-one of the forty-eight states, while some others have the matter seriously under discussion and in the hands of commissions for investigation The federal law of 1907-1908 was far in advance of any state law in force at the time of its enactment It is still in force and extended by amendment till it is now applicable to employees of the government on the Panama Canal and on the Alaskan Railroad and employees of corporations engaged in interstate commerce It is, however, based on fault

In 1910, New York took the lead in enacting a liability law of general application which has been followed by a great number of states in its essentials, though modified to meet local requirements and legislative ideas

For the purposes of the present paper it is important to note that in nine states, California, Colorado, Maryland, Michigan, Montana, New York, Pennsylvania, Ohio and West Virginia, there is maintained a state insurance fund In the seven states first mentioned the state fund actively competes with private insurance companies

Nearly all the countries of Europe now include compulsory insurance of the working people against illness "The cost of insurance is usually distributed between the worker and the employer, and in some countries the government also contributes a share By this device the employer is compelled to bear some portion of the cost of sickness among his employees, and the worker receives larger benefits than he could purchase unaided"

Notwithstanding the dismay of the medical profession in England when this law of compulsory insurance of workmen against illness was first promulgated (1911) which was marked by a veritable strike of the British Medical Association, the law is being enforced and the fears of loss of income which actuated the medical men have not materialized, being more than neutralized by the realization of the previously inadequate medical care the laboring classes received and the consequent increase of volume of professional service provided under the new law The fact is that the incomes of a great body of medical men in Great Britain have increased as a result of enforcement of the law, and more adequate medical and surgical service has been rendered the working classes, although the quality thereof is criticized as not having improved in proportion

It is not possible to foresee the limits to which this movement may continue in this country, but it is only a short step from industrial accident insurance now effective in thirty-one states to compulsory insurance of workmen against accident and illness in all of the states There is much difference of opinion as to whether the whole matter should not be taken over by the federal government and the law made uniform throughout the country and be enforced by a government bureau Against this view is the practical fact that in thirty-one of the forty-eight states there is already provided most of the machinery required for the economical enforcement of such laws, machinery which is more attuned to local conditions than a federal bureau is likely to be On the other hand, the general government would be less likely to go to the extremes of socialism which many foresee as the logical conclusion of present tendencies in state legislation

A movement so widespread over the world is not to be checked, it must continue to spread and to develop, and must be reckoned with as a permanent sociologic institution in which the medical profession is deeply concerned

Some conception of the effort the laboring classes have made by mutual insurance schemes against sickness and other risks may be obtained from a study of the so-called friendly societies historically traceable to the guilds

Naturally in such schemes insurance against sickness took a prominent place, and until with the development of modern methods in manufacture, the use of steam and electric power, the use of complicated and often fast running machinery, of explosives, etc, sickness was a greater risk than industrial accident

In the latter part of the nineteenth century, friendly societies increased greatly in numbers all over Europe In England alone a few years ago there were 25,000 such societies with a membership of about 6,000,000 They insured against a great number and variety of risks — sickness, accident, old age, decrepitude from other causes, loss of employment, death, loss of a workman's tools, additions to the family, funeral expenses and in some cases even wedding outfits

The great increase in such societies was an effort to meet the changing conditions of modern employment, and was in effect a protest against the inadequacy of the law in protecting wage earners and people of small means against losses which were often the cause of the complete submergence of these people in abject poverty

Such organizations, having little capital back of them, were often not financially sound, and hence were not altogether reliable in affording relief In Germany in many instances it was made a matter of contract and later of law that the employer contribute a certain proportion of the funds

REDRESS UNDER THE COMMON LAW

In England, previously to 1880, the date of the passage of the employer's liability act, aside from the benefits to be derived from membership in the friendly societies, the injured workman could seek redress from his employer only under the common law, and the same was true in this country, whose fundamental law is based on the English common law, and is still true in some states

Under the common law an injured employee could claim compensation from his employer only when the accident could be shown to be due to the fault of the employer, against which contributory negligence, common employment and contractural assumption of risk successively became valid defense

As long, however, as industries were carried on on a small scale, the employer of a few men, working generally alongside of his employees, the common law rules were comparatively satisfactory, but with the development of industries on a large scale, especially under control of great corporations, the relations became so complex that liability based on fault was most difficult to establish, and the defense of contributory negligence and common employment became so effective as to work an intolerable hardship on injured employees, who not only had to bear practically all the risk of physical injury but most of the monetary risk as well, although they were least able to do so

Under the common law, medical and surgical service to injured and sick employees was on an even worse basis Men with incomes under $1,000 a year had little margin from which to provide premiums for life or other insurance, and little to pay for medical and hospital service, especially when, as was too often the case, the bread winner was the one sick or injured They were forced to take advantage of free clinics and charity hospitals with the attendant humiliation, the distaste for which would often lead a self-respecting man to consult a physician, pay what he could and then run up a doctor's bill of such size as to make the honest workman the debtor of the doctor for the rest of his natural life Or, finding himself unable to pay, he would let the bill run on till written off the doctor's books Again he would join a lodge or a "hospital association," or, which is not much worse, make his own diagnosis and fill his stomach with "patent medicines" and his closet shelves with the empty bottles

Medical and surgical fee bills established by local medical societies in various communities based on the average incomes of the so-called better or at least more prosperous classes in those communities provide charges altogether out of reach of such workmen, and while most medical men do a great deal of work without monetary compensation, and many permit patients with small incomes to pay what they can, only too frequently is the reverse the case, and charges made which are altogether impossible of payment without serious sacrifice on the part of the patient

Under the common law system, large employers of labor often find it advantageous to employ on a basis of contract one or more physicians or surgeons to care for their employees, the expense in most instances being paid out of the funds created by withholding from the wages of each employee a small sum each month, generally $1, out of which also is paid the cost of hospital maintenance Such positions of contract physician are often sought after by young medical men because thereby they are insured a living and have opportunity of adding to their incomes by doing more or less private practice in the vicinity

This form of medical and surgical relief of workingmen answers well or poorly according to the quality of the medical man employed Often the salary paid is too small to attract a competent man, and, again, the "company doctor" is sometimes appointed because of social favoritism rather than fitness In general he is a sort of agent of the company whose business is the corralling of evidence which might be produced in court in defense of any action for damages the injured employee might later inaugurate, services which are apt to be looked on at company headquarters as being quite as important as the purely professional duty of attending to the patient and alleviating his suffering He is expected to neutralize as far as possible the pernicious activities of the "ambulance chasing lawyer"

Under this system, there being no provision for the payment of indemnity for the disablement of an injured employee, the company is interested only in providing first aid and surgical and hospital care during the acute stages of illness Except as a matter of charity it is not interested in end-results And yet end-results are the particular things with which the injured individual and the industry as a whole are vitally concerned A man maimed is lost to the industry and becomes a burden on the community Moreover, it is estimated that the average cost of breaking in a new hand is $35

Although industrial accident insurance has been in force in California only two years and a half, it has done much to lessen the evils of contract practice, and many concerns have already ceased the practice of employing physicians on contract

The friendly societies or fraternal organizations or lodges which, as said above, have increased so prolifically during the last fifty years, are organized largely to afford medical and surgical services at such cost as to be within the reach of the laboring classes, the monthly dues providing the means for the employment of community physicians. Many such, however, extend their membership to include people in much more comfortable circumstances, who join for the purpose of securing cheap medical and surgical service.

The medical profession, therefore, finds itself opposed to what it considers exploitation of the profession. While from the standpoint of cheapness this scheme works well enough for the members of the societies, it often — in fact generally — fails to secure to the patient competent medical service. Investigation has shown that in these societies the payment to the doctor is far less than $1 a visit on the average, and in some cases as low as 25 cents. The members paying monthly dues and not so much per visit run to this doctor on the most trivial excuse, thereby unduly multiplying the number of visits. Some of these lodge doctors see forty patients a day, receiving therefor from $100 to $150 a month. It is no wonder, then, that the medical work done is, as a rule, of the most perfunctory sort. This fact is appreciated by the members of the societies, for often when fearing severe illness they will forsake their lodge doctor and consult some physician in whom they have greater confidence, feeling instinctively that the lodge doctor's service is worth what they pay for it. The outrageously poor quality of medical service, more than the cutting of prices, is the ground for the medical profession's discountenancing lodge practice.

Under workmen's compensation and compulsory industrial accident insurance, practically the whole of traumatic surgery is taken from the lodges, and if insurance against illness of workmen becomes a fact in this country, as it has in England and Germany, the *raison d'être* of most of these associations will have disappeared. England and Germany, however, instead of destroying these societies, have utilized those of them which are financially sound, and have in fact commisioned them to take care of accident and illness of members, but under strict governmental supervision.

Of late, in most of the large cities of America, people of small means have been exploited by lay organizers or promoters of so-called hospital associations. By cleverly worded advertisements promising first class medical and surgical service and hospital care often in a hospital chosen by the patient, memberships into the thousands have been built up. Since a large proportion of the dues collected is retained by the promoter as compensation for his labors in effecting the organization and for other reasons, the members of the medical profession of high standing and ideals are not attracted and the quality of medical and surgical service provided is necessarily poor. These so-called hospital societies or associations are considered by the better men in the medical profession as distinctly pernicious. Clinical records, if kept at all, are utterly inadequate. These hospital associations are at bottom little more than money-making schemes for the benefit of the promoters, and the laboring classes furnish a great majority of the victims.

Another evil foisted on the people of small means is the so-called Great American Fraud — the "patent medicine" evil. The victims are drawn mostly from the class of wage earners who buy the medicines not so much because of greater faith in such medicines than in the prescriptions of reputable physicians, but largely as a matter of the saving of doctors' bills. It is human nature to be more willing to pay for medicines which are things tangible than for professional advice.

Compulsory industrial accident insurance when properly administered will go far toward supplanting these organizations in the good they do. It will do it better and will be freer of harmful influence. If applied to sickness as well as accident, it will be a most potent check to the evils of "contract practice," "lodge practice," "hospital association practice," and the "patent medicine" evil, and will put a premium on better quality of medical and surgical practice.

THE CALIFORNIA LAW

The compulsory industrial accident insurance law of the state of California is known as the Workmen's Compensation, Insurance and Safety Act, passed in 1913 and effective Jan. 1, 1914, amended in 1915. The chief amendment of medical interest is in substituting for industrial accident the idea of injury in employment, whether accidental or not, and including industrial diseases.

It applies to all employees except in farm, ranch or dairy labor, domestic service and casual employment. It provides for an industrial accident commission of three who are charged with the enforcement of the law, and establishes a state compensation insurance fund administered by the commission. The proceedings of the commission are public records, and their hearings have the force of courts of law, but with a far less formal procedure. While their simplicity of procedure is scarcely to be approved by the lawyers, it is a boon to doctors who have suffered as witnesses from the law's delays and from hostile cross examination, from misunderstanding and misrepresentation.

The law requires full medical and surgical attention for injured wage earners for the first ninety days, and makes it obligatory on the insurance carrier to furnish such medical, surgical and hospital treatment, including nursing, medical and surgical supplies, crutches and apparatus, as may reasonably be required at the time of the injury and within ninety days thereafter, and longer at the option of the commission.

In most of the states the power of these commissions is very great, there being no appeal from their decisions except to the state supreme courts, and this is time consuming and expensive and hence not often worth while. Under such circumstances it is all important that the commissions should be constituted of broad minded men of unimpeachable integrity, men strong enough to be just in the face of criticism and free from political control.

California has been fortunate in the personnel of its first commission, which has been in office long enough to have established precedents which will be difficult later to neutralize. Its attitude toward the medical profession is that of high appreciation, as is attested by its selection for medical director of a prominent physician who has the confidence and respect of the entire profession.

The following paragraphs from reports of the California Industrial Accident Commission, for the fiscal year ending June 30, 1915, indicate the excellent relations of the commission and the physicians of the state, and it is interesting to note the appreciation on the part of the commission of the possibilities as to the improvement in surgery that may be expected to result from the administration of the law[1]

The commission has obtained the services of ninety physicians prominent in their several specialties, in different parts of the state To these (medical referees) it looks for assistance in arriving at a just estimate of the medical aspect of cases The interest manifested by these men is most gratifying *They are cooperating perfectly with the commission*

No small part of the success of the law is due to this cooperation

The industrial commission is forming its standard of surgical results required of the medical profession of California, *principally upon the opinions of the medical referees* These standards are very high The effect will be better surgery through the state, diminished permanent disabilities, and decreased indemnities Mediocre and careless surgical work can no longer pass in industrial accident cases The commission is *always at hand closely to scrutinize each case*

It has been found by bitter experience that all physicians qualified by the laws of the state to practice surgery are not necessarily surgeons

The commission is gathering an x-ray museum, in which, *from present indications, there will shortly be a complete series of examples of all bone injuries* This, with the mass of literature accompanying the cases involved, will eventually be of inestimable value for research, for treatment and for decisions of the commission A medical library of reference and a museum of many interesting specimens procured from accident cases are in progress of development

Through the state, the attitude of the medical profession toward the Workmen's Compensation Insurance and Safety Act, and the Industrial Accident Commission has shown a very noticeable and gratifying improvement It may be said that understanding and cooperation are now universal The profession realizes that while the act is doing good to the working people it also does good to the whole state It realizes that the medical profession likewise shares in its benefits

Of the many influences at work at the present time *tending to improve the quality* of surgical practice in this country, the most important and most fundamentally effective is, of course, the general betterment of medical education resulting from the development of medical schools on a university basis and under university control Workmen's compensation and industrial insurance, however, is not to be despised in this regard It must inevitably exert a powerful influence for better surgery over the whole country

Already in California the insurance carriers are beginning to realize that it is poor economy to employ physicians and surgeons merely because they happen to be cheap They are beginning to realize that true economy lies in the policy of employing such men as will insure a high quality of service The poorly equipped and poorly prepared surgeon is in a fair way to being eliminated or, at least, to be relegated to the practice of surgery among the well-to-do who have to look out for themselves

Except through public opinion, which is a very lenient critic, slow of action, short of memory, and prone to be hoodwinked by the plausible, and through the hated malpractice suit, which, in a great majority of cases, is entirely pernicious, the work of the surgeon is seldom subject to review Industrial accident insurance, by making it to the pecuniary interest of those responsible for the choice of a surgeon in accident cases to provide the best available surgical services, will furnish a practical incentive for following up the work of the surgeon and inquiring into the causes of poor results The purse of the insurance carrier will be sensitive to a continued harvest of avoidable deformity and continued disability

As a rule, the men who are doing good clinical work welcome such review and naturally those who do poor clinical work may be expected to resent it

Moreover, it cannot be otherwise than that the industrial accident commission would be interested in learning from which men in a given community continues to emanate the larger stream of poor surgical results

When it sends a case the rounds of the referees for determination of the nature of the original injury and the causes of the persistence of disability, the commission is apt to be impressed with the fact, too often evident, that the records of the earlier examinations are so imperfect as to make the determination of *the original injury impossible The medical director* of the California commission is looking into the possibility of requiring records to be taken on prescribed forms Through the state compensation fund, which the commission administers, the commission has it quite within its power to insist on such records being kept, and this will have a decidedly stimulating effect in favor of practitioners keeping intelligible records Records to be intelligible must, of course, be based on careful examination of clinical phenomena The commission has already practically insisted on roentgenograms being taken in the early stages of all cases presenting any suspicion of fracture or joint injury It ought, likewise, to insist on a temperature chart being kept of all cases with inflammatory complications, as well as blood count and examination of the urine The insurance carriers are so much impressed with the prevalence of syphilis that they have inaugurated a veritable boom in Wassermann reactions They are eager to show that syphilis, if present, is to blame rather than the accident The attitude of the commission is that if an accident has occurred in a syphilitic the case is compensable to the degree in which the syphilitic lesion is aggravated by the accident — or where syphilitic complications follow an injury and extend the period of disability very greatly beyond what would be normal with such person in the absence of such syphilitic condition, the case is not compensable for such extended disability These points are not always easy of determination Moreover, *it is recognized that the Wassermann reaction is not infallible*

Diagnosis or mere expression of opinion unsupported by *clear description of clinical findings on* which diagnosis is based is not sufficient for the purposes of the commission, and the insurance carrier cannot afford to employ in important cases surgeons who do not keep reasonably clear records

In the beginning of this movement of industrial accident insurance in this country, insurance adjusters anxious to make records of economy commonly employed men as surgeons on the basis of cheapness, instead of quality, and it would seem that the margin of profit must be pretty large in the great numbers of *minor cases* when one considers the heavy indemnities many of the companies have had to pay in consequence of poor surgical work in cases of severe injury An encouraging sign in this direction is that a number of companies engaged in this sort of business in California have been forced to retire from the field partly because of the enthusiasm of their adjusters for cheap surgery It thus happens that the industrial accident insurance fund in California is doing a larger business than any other insurance carrier, although the scale of premiums is the same It is more liberal with the medical practitioners, and through its medical director it keeps sharp watch on the quality of surgical work done in its cases and makes quality the criterion of future employment It is learning very rapidly which men in all parts of the state are doing the good work in these cases, and which are doing the poor work

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[1] Annual report 1914 1915 p 24

It is difficult to arrive at an accurate estimate of the amount of money paid the medical profession for services in industrial accident cases, but the commission estimates that in 1914 there were 62,211 industrial accidents in California necessitating medical treatment Compensation was paid injured employees in the amount of $1,131,630, and for medical services (including hospital charges) $730,178 In other words, of the total money paid out by employers and insurance carriers on account of industrial accident, excluding expenses of administration, 60 per cent was paid to the injured workmen and 40 per cent for surgical and hospital services, but figures are not available permitting the separation of the surgical from the hospital charges

The California commission, in cooperation with the insurance carriers, has established a fee bill for surgical services based on the average earning power of the employees but is confessedly a tentative arrangement In general, it provides a fee of $1 50 for a visit at house or hospital, and 1 dollar for an office visit, with a scale for typical operations, varying from $5 to $75, assisting at operations from $5 to $10, administering a general anesthetic $5, and testimony before the commission as to fact of injury $10 Nothing is more difficult equitably to adjust than a professional fee bill under any circumstances, and such a fee bill based on a set fee for a visit is apt to be taken advantage of in unduly increasing the number of visits, yet, on the other hand, it conduces to insuring that the visits will be made and thereby possible neglect of the patient avoided At times, however, it goes too far for decency, as in a case of fracture of the patella by direct violence with little displacement, in which the surgeon made two visits a day for weeks, and one visit a day for six months, his itemized bill reaching from ceiling to floor In such cases and in case of dispute, all medical and hospital bills are passed on by the medical director of the accident commission, and finally by the commission itself On the other hand, when an overenthusiastic insurance adjuster shows a tendency to browbeat a medical man into accepting a ridiculously small fee for competent work, the physician can have the matter reviewed by the medical director of the commission, who will see to it that an equitable adjustment is made, for example, the fee bill provides a fee of $10 for nonoperative first dressing of a fractured patella In one case the adjuster tried to make a physician who had successfully performed a necessary open operation on a complicated comminuted fracture of the patella accept a fee of $15 The facts being made known, the medical director saw to it that the insurance carrier paid several times that fee, reckoning it as a major operation

While the foregoing fee schedule is low, it was consciously adopted as a minimum schedule applicable to average cases The commission has established the practice of approving bills for larger amounts for cases presenting features of unusual gravity or requiring unusual skill

For example, the schedule fee for setting a fractured femur or humerus is $25 The commission has approved a bill for transplantation of bone for nonunion in the amount of $150 for the operation alone For fractured tibia the fee of $10 is increased to $30 if operation of plating is done The fee for operative refracture of bone for malunion has been approved at four times that provided in the schedule for the primary setting of the fracture

The fear expressed by medical men when asked to accept this schedule, that if accepted it would be used in courts of law as a precedent and applied to cases in private practice, seems not to have materialized

In most of the states the state industrial accident commission or board has no jurisdiction over the employees of corporations engaged in interstate commerce except in some states where, if the distinction between interstate and intrastate commerce can be clearly made out, the commission has jurisdiction over the employees of such corporations who are shown to have been engaged in intrastate commerce when injured These corporations, nearly all large employers of labor, are keen to take advantage of this exemption for the reason that thereby they avoid paying compensation to injured or maimed employees It is estimated (Pillsbury) that not more than 12 or 15 per cent of employees of railroads engaged in interstate commerce come under the jurisdiction of the state industrial accident commission, and that at most only 25 per cent receive compensation at all comparable to that received by all other workmen in the state, except in agriculture and domestic service, which are specifically exempted in the law In other words, 75 per cent of injured railroad employees receive no compensation for temporary or permanent disability beyond medical and hospital care In case of accident to a railroad employee, it is often difficult to determine whether the man was at the time employed on interstate or intrastate commerce — his duties might change in this regard within an hour In fact, in most cases it can be determined only by an actual trial with hearing of witnesses, etc

Employees engaged in interstate commerce are under the federal law of 1907-1908 (extended by amendment), which is based on fault, and receive no compensation for disability except where negligence can be proved On the other hand, railroads commonly continue the wages of their employees during temporary disability, and maintain a system of pensions for continuous service They also exercise the opportunity afforded by the diversity of employments required by their business of placing maimed employees in position in which their deformities are not disabling

These corporations, as a rule, maintain their own hospitals and corps of surgeons, in some instances making generous contribution to the funds contributed by the employees, and giving the employees a voice in the election of the surgical staff The surgical service, however, is not subject to review, as is the case with workmen under state industrial accident insurance, but railway surgeons have the great advantage of being able to take their serious cases to central hospitals where efficient service may be given

Osteopathy has not been recognized by the industrial accident commission of California except under certain circumstances At the present time, the law of California provides for representation of osteopathy on the state board of medical examiners, but osteopathists are not permitted to perform major operations, or to give anesthetics

The common-law right of an injured employee to sue his employer in the civil courts is abrogated by the compensation law in most of the states except in case of the grossest negligence This results practically in barring suits for damages, but the publicity given unfortunate results by the practice of the commission and the insurance carriers of sending the patient from one surgeon to another in the hope of finding some one who can remove the deformity and disability, and thereby lessen the indemnity, entailing as it does necessarily criticism of the incompetent surgical work which may have been the cause of the failure to prevent deformity and disability, is very apt to engender malpractice suits Again, the commission sometimes asks a surgeon witness whether if proper competent surgical attention had been given in the beginning of a case the disability might have been avoided Occasionally this question must be answered in the affirmative, and record is made of the question and answer

Thus far, I believe, only three suits for malpractice have occurred in industrial accident cases in California in the two years and a half since the law went into effect, and I am informed that all these cases are without merit and are not based on criticism of the attending surgeon made by medical referees or in the office of the commission In fact, the commission in California deprecates malpractice suits and does all in its power to forestall them

In event of suit, however, against a surgeon whose professional fee for service rendered in an industrial accident case paid by the insurance carrier, it is not to be expected that the insurance carrier will assume the defense of the surgeon except in the unusual case in which the surgeon has a contract with the insurance carrier covering the point, for the surgeon who is requested to take charge of a case surgically is otherwise an independent contractor

A most important judicial decision in the matter of malpractice suits in industrial accident cases was made by the Washington Supreme Court (No 12747) so recently as February last, in *Ross* vs *Erickson Construction Company,* in which the adverse decision of the trial court was reversed and the case remanded with instructions to dismiss on the ground that the legislature in passing the industrial accident insurance law had removed the physician as well as the employer from the litigious class, provided that the physician is regularly licensed to practice, but this decision is based on the peculiar provision of the Washington statute by which industrial accident insurance is substituted for all other forms of redress in such cases On the other hand, in recent decisions in Minnesota, Wisconsin and Kansas the court has held that the physician is liable for malpractice in cases under industrial accident insurance as in other cases

The attitude of organized labor to industrial accident insurance is difficult to understand In fact, it has not yet taken shape and been finally formulated I am informed by men close to leaders of labor organizations that organized labor is not altogether pleased with the law of California A fundamental objection is made that the law is in effect paternalistic, and there is nothing which labor leaders take greater exception to than government paternalism They feel that the individual workman should have the choice of his physician and surgeon, as if the freedom of choice were a more precious possession than a well qualified surgeon In final analysis this freedom of choice of surgeon is apt to take the form of a labor union electing its own surgeon who is employed on contract and paid so much per capita of the membership or on salary In either event he is elected by the union and will therefore be chosen rather as a compliment to his political acumen than to his professional attainment

It is the idea and practice of the lodge doctor over again, and in no real sense does it establish the principle of free choice of the individual

On other grounds it is very doubtful if free choice of physician or surgeon on the part of the injured individual would be a wise thing to provide The principle is in force in Switzerland, to be sure, but when tried in France it was found that through collusion or what not the cost of professional services unduly increased and the amount paid in indemnities trebled

The industrial accident commission of California maintains a small but active force of safety engineers through which, and by other means, it has done much to lessen the number of accidents and notably the number of deaths from accident In 1915, there were more than 60,000 workmen injured and 533 killed in industrial accidents, a reduction in number of deaths of 22 per cent of the number reported in 1914, because of better conditions of labor, safety appliances and safety methods The largest percentage reduction was in transportation and public utilities, while in service (employees of men in the professions, in hotel service, restaurants, domestic servants, amusement employees, etc), where, because of diversity of employments, safety appliances and methods cannot so readily be applied and which have not come under jurisdiction of the safety engineers, there has been a slight relative increase

The laws of the various states are not perfect, they are not even uniform They will have to be modified in numerous particulars, and it behooves the medical profession to study into the question individually and in committee in order intelligently to influence legislation to the end that the real interests of the laboring people be served from the standpoint of quality of surgical service provided, and that no injustice be done the medical profession

There are many practical questions to be decided, among others the adjustment of the relations of hospitals and dispensaries to the movement By taking the great mass of laboring people out of the category of the recipients of charity, a great burden will be lifted from many struggling hospitals and dispensaries

On the other hand, just as private cases often may be best worked out by groups of associated physicians, so these industrial accident cases and, when health insurance comes, cases of illness in the laboring classes may be economically and efficiently handled by dispensaries, of which the better clinics maintained by medical schools may be taken as the type It would be greatly to the advantage of the patients to be utilized for teaching purposes, and practically few of them would seriously object, for it is widely known that in teaching hospitals and clinics the patients receive the most thorough study

Endowed hospitals and dispensaries caring for industrial accident cases will derive a considerable income from them, and the disposition of funds so created may become matters of controversy It would appear that the surplus of such funds should be devoted to the betterment of the hospital or dispensary service concerned, including payment of something in the way of salaries to the professional personnel

Taking these cases out of the category of charity patients will tend to the creation of private dispensaries and even hospitals, as has occurred in California There is no fundamental objection to hospitals and dispensaries being established for the purpose of caring for these cases if they are under the supervision and regulation of the accident or health commission in such wise as to guarantee a high quality of professional service

CONCLUSION

I would repeat that social insurance against industrial accident constitutes a great world movement Already in force in thirty-one states in America, it is sure to be adopted in the remaining seventeen and to be followed by insurance of the working classes against illness The idea has come to stay and must be seriously reckoned with by the medical profession If the medical profession accepts it in a proper spirit and accommodates itself to it, there is sure to result not only immeasurable good to the working classes, but also much good in the direction of improvement in the practice of surgery and in the practice of medicine as well

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HEALTH INSURANCE IN ITS RELATION TO PUBLIC HEALTH *

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NEW YORK

It is not an easy matter to condense within a fifteen minute paper the entire comprehensive subject of compulsory health insurance, but perhaps such an effort is at present unnecessary So much has been said and written on the subject within the last few months that some familiarity with the subject may be expected from members of the medical profession The valuable work done within the last year or two by the Public Health Service and the splendid reports of your Judicial Council, of which the first was presented about a year ago and the second one is to be made available to the medical profession in the very near future, have paved the way at least for a general understanding of the problem by American physicians It seems sufficient, therefore, to present the entire subject at this time in a concise and somewhat schematic manner, bringing forth for special emphasis three or four specific problems somewhat less understood

Insurance is primarily a process of distribution and not of production In the language of a technical definition, "Insurance is a provision made by a group of persons each singly in danger of some loss, the incidence of which cannot be foreseen, that when such loss shall occur to any of them it shall be distributed over the whole group" The decisive feature of insurance is, therefore, a financial one—the restitution of the losses to the individual, the spreading of the losses over a group

Health insurance, to use the term which has become popular during the last six months, or sickness insurance as it is perhaps somewhat more logically known on the European continent, deals with the economic losses incurred because of disease These losses, at least as they are apparent on the surface, are twofold First, the loss of earnings due to disability produced by sickness, and second, additional expenses incurred through sickness, which are largely expenses for the purpose of achieving recovery, such as the cost of medical or surgical aid, drugs or special supplies, hospital attendance, special care and nursing It is generally known that health insurance, like many other forms of insurance, may be bought from commercial insurance companies in the open market, or obtained through membership in a large variety of mutual benefit organizations

The type of health insurance actively discussed throughout the country at present is known as "social health insurance" The term "social insurance" introduces a somewhat abstract concert concerning which there is as yet no absolute agreement as to definition and content It is interpreted by many as equivalent to state insurance, but this is not justified by European experience if state insurance is to mean what the term seems to indicate—an insurance mechanism created and administered entirely by the state authority through its own officers and backed up by state funds Rather does the term "social" describe a certain attitude of organized society to the proposed system, an attitude of cooperation, control, financial and administrative assistance and perhaps compulsion

The need for social insurance in this country has already been indicated in several chapters of my book on 'Social Insurance" published about three years ago Specifically the need of health insurance in this country has been treated very completely and with a great wealth of detail in a recent bulletin of the Public Health Service, prepared by Dr B S Warren and Mr Sydenstricker It will be noticed, even by the casual reader of this report, that special emphasis is laid on the need of the wageworking class The argument must necessarily be built on certain distinct features in the economic status of the wage worker

1 That the working class is, in the point of earnings, on the lowest rung of the economic ladder

2 That the working class shows a very much larger rate of sickness than other social groups, both as a result of general conditions of living as well as in consequence of specific hazards to health which every kind of wage work creates And both these are factors with which no one group of society is more familiar than the medical profession

Of course, neither of these conditions is absolutely limited to the wage working class There are other social groups whose general economic conditions are not much more favorable, as for instance the lower strata of the farming class, especially in the Southern states, and there are many thousands of self employed persons in industry as well as commerce whose need of health insurance is equally great From the point of view of need, therefore, the limitation of social insurance to the wage worker cannot be justified The very fact that the older term "workingmen's insurance" has given way to the broader, more comprehensive, even though more abstract term "social insurance" is an indication that, at least theoretically, such a limitation is not desirable It is for another reason that, notwithstanding this change in terminology, social insurance remains largely workingmen's insurance Thirty years of practical experience in Europe have proved that the field of usefulness of social insurance must remain very limited until the element of compulsion is introduced, and compulsion is extremely

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* Read before the Section on Preventive Medicine and Public Health at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

difficult to apply to the economically unattached individual The wage or salary contract offers a very convenient method for exercising compulsion, not only on the wage worker himself, but, what is equally important, on his employer While compulsory health insurance for these reasons must necessarily be limited to wage workers or salaried persons, voluntary health insurance may be encouraged with advantage among other social groups

That an immense amount of good must come from the payment of cash benefits to men unable to work because of sickness should be self-evident to the medical profession Charity workers and other social workers are almost unanimous in their assertion that sickness is responsible for the greatest proportion of destitution with which they are called on to deal professionally Collectively, physicians see even a larger amount of human distress caused by illness since their observation is not limited to the more extreme cases which become objects of charitable relief, for the average respectable workingman's family will go a long way, depriving itself of everything above the barest necessities, before applying for charitable aid

And yet, if this relief of distress through money benefits constituted the entire purpose of health insurance, as it does with most commercial insurance, it would not be a matter in which the medical profession, as a profession, would be very directly concerned For it cannot be said that the solution of the economic problems devolves upon it The proper organization of medical aid, however, *is* a problem for the physician because of the possible effect of health insurance on the health of those insured, and through them on the health of the community at large Even the duty of the individual physician to his patient is not yet fully complied with when the diagnosis is made and the necessary course of treatment outlined The physician cannot complacently close his eyes to the conditions under which his patient lives and the extent to which he is physically able to comply with the advice given The development of medical social service is an indication that the medical profession is gradually learning to appreciate its broader duties in this matter But still broader are the obligations of the collective medical profession to the nation at large in the matter of preservation of public health If the advocates of health and other forms of social insurance feel at liberty to call on the busy medical profession for their cooperation and support, it is only because of the conviction that every comprehensive social measure for improvement of the general health conditions and prevention of unnecessary suffering and disease will find a ready response in the American medical profession The existence of this section of public health is one of the many evidences to that effect

What basis is there for the claim that compulsory health insurance is going to have the effect of preventing sickness and generally improving health conditions? Often by enthusiastic proselytes it is taken for granted, or at least a convincing precedent is found in accident compensation It is pointed out that the "safety first" movement resulting from compensation legislation must be paralleled by a "health first" movement in consequence of health insurance laws Yet catchy slogans, though often useful in a way, do not result in substantial changes of social conditions It is argued that all these desirable results will be accomplished by the economic motive to reduce the cost of health insurance, as the "safety first" movement was stimulated by the cost of compensation That undoubtedly is a substantial force, but its strength may be exaggerated The cost of compensation for industrial accidents was felt in various European countries for ten, twenty or thirty years, but the number of industrial accidents shows little tendency to abate It is true that in Germany and Great Britain the number of fatal and serious accidents is showing a substantial decrease and that in this country, while sufficient time has not yet elapsed to judge of the result, a very energetic safety campaign has been inaugurated which should, as far as we can foresee, produce some effect

But it is important to remember that the preventive effect of the economic motive does not work itself out automatically The prevention of industrial accidents requires very painstaking efforts of the safety engineer The prevention of excessive illness will more than anything tax the expert in industrial and public hygiene Let us review more or less systematically the various ways in which health insurance may accomplish its preventive work In this way the best conditions for realizing the preventive effect may be determined and the medical profession may render a service of great value in insisting that such conditions shall be established

1 The health preserving effect of the money benefit The effect of the money benefit is evidently not limited to relieving misery and destitution for the time being It is even more important in giving a better chance for recovery It needs no demonstration that recovery from any illness must be seriously interfered with by insufficient food or fuel or by the mental worry over financial difficulties It is an aspect of the problem with which every physician practicing among the poor must be thoroughly familiar, and it is unnecessary to dwell on it at length But in order that this effect shall be fully realized, the benefit must be substantial A small amount, perhaps uniform for all (as for instance the bare $5 a week given by most trade union funds at present out of which even medical care must be purchased) will not be sufficient The medical profession, therefore, as the warden of the public health, has a direct interest in seeing that these benefits be made substantial so as to cover the cost of the necessities at least

2 Equally important for its curative effect and the prevention of relapses is the opportunity gained to stay away from work when in the physician's opinion rest is necessary This may be largely nullified by too rigid an interpretation of the concept "inability to work" A careful study of the workings of the British health insurance system, made by the Special Departmental Committee on Sickness Benefit Claims, disclosed a very serious problem in this respect The friendly societies too often assume that the right to the benefits accrues only as a result of absolute "inability to perform any work" Even waving aside the somewhat facetious criticism that a woman sick in bed might still be knitting and therefore not be totally incapable of work, it still remains true that a large proportion of ill persons are not physically incapable of working, who, in accordance with reasonable requirements of medical science, should not work Hundreds of illustrations might be cited, but before a professional audience they seem to be altogether unnecessary The administrative officers of societies violently object to granting sick benefits simply because, in the opinion of the physician, the insured employee would profit by a prolonged rest That there is room

there for abuse and malingering may be readily admitted, but nevertheless the ever present possibilities of abuse must not stand in the way of social legislation The preventive effect of health insurance cannot fully be realized until it is understood that not merely physical disability but medical inadvisability, certified by a responsible medical officer, and subject to rule of reason and review, should be the basis of the sick benefit It has been charged against British practitioners under the law, for instance, that they have improperly certified a large number of female employees simply for anemia and debility Such liberality is found dangerous because the British system is based on an iron-clad level of premiums and the cost must be kept within the level, but from a point of view of public health it is very much more important that thousands of young women, the mothers of the future generation, suffering from anemia and debility, which in the final analysis means nothing but overwork and underfeeding, should be given a chance to recover even if the cost of insurance may be slightly increased thereby

It is the failure to understand this difference between "disability" and "inadvisability to work" that causes many superficial critics to deny the preventive feature of sickness insurance in Germany It is pointed out, for instance, that the health conditions of the workmen in Germany could not have improved because the average amount of sickness disability has increased Thus in 1887 there were 778 sick days per hundred members of the Leipzig fund, and in 1913, 1,134 days As a matter of fact, this simply indicates an increase in the days of inadvisability to work, or in other words, a very much improved care of the sick Very much more significant is the decline in mortality among the insured members from 9 38 per thousand from 1889 to 1893, to 7 66 per thousand from 1909 to 1913, or a decline of nearly 20 per cent in twenty years

3 It is quite obvious that the greatest possibility for prevention, or at least for health conservation, lies in the proper organization of medical aid The two terms "sickness prevention" and "health conservation" are not necessarily synonymous Barring the stamping out of certain infectious diseases, the time is indeed far distant when people will cease taking sick, but once having fallen sick they can and should recover much sooner and more thoroughly than they do now Even in industrial accidents, thirty years of preventive work in Germany were much more efficient in shortening the periods of disability, and reducing fatalities and grave injuries, than in reducing the total number of accidental injuries

But the effectiveness of medical aid depends very largely on the thoroughness of provisions concerning it From a purely financial or insurance point of view, the reimbursement of the additional cost required for medical advice, or the saving of expense by furnishing the same quality of medical aid which the sick workman would have purchased, is all that is necessary Applying the same reasons, nothing need be done in cases in which the patient could have received medical aid free or in which he would not have been likely to call for medical aid, because in insurance practice where there has been no financial loss there should be no compensation

From the point of view of public health, such a narrow interpretation would have been most unfortunate If the medical profession is the guardian of the public health, it must be vitally interested in the proper organization of medical aid under the health insurance law It is obvious that since such a law undertakes to furnish medical aid to millions of people, a new wholesale purchaser of medical services appears in the place of many individual purchasers and that this must profoundly influence the economic and social status of the medical profession This is an important problem of itself, and the Social Insurance Committee of the American Medical Association, which I have the honor to represent, has been organized for the explicit purpose of studying it, but I do not want to assume for a moment that the medical profession of the United States will approach the problems of medical aid under health insurance simply from the point of view of their own financial interest Leaving these financial problems aside at present, I want to discuss at this time the broad problem of the social possibility of proper organization of medical aid

It is well known that a good deal of sickness among the wage workers at present remains unattended in this country The conclusions of the Rochester sickness survey made by the Metropolitan Health Insurance Company point at some 40 per cent The profession undoubtedly knows that the medical aid available to the work is not only quantitatively insufficient but also qualitatively inefficient As Dr Lambert tersely puts it, a great deal more team work is needed than is at present within the reach of the working man

A system of medical aid which fails to provide for such team work, which interferes with any degree of medical organization, either because of considerations of economy or because of conservative clinging to old standards, in other words, a system which leaves the quality of medical aid where it has been before the introduction of health insurance, will utterly fail to make health insurance a powerful fulcrum for lifting general health conditions This is just what happened in England, as compared with a much more effective system of medical aid in Germany and other countries Whether medical aid under health insurance will accomplish all that it is capable of depends on such details as availability of consultant and specialist arrangements for hospital care, additional care for convalescents, and a liberal provision for drugs, appliances, etc

Even the financial arrangements for remuneration of physicians may have a grave influence for evil or good I think it may be frankly admitted, whatever the economic interests of the medical profession may be, that a capitation system of payment, so much per head per annum, no matter whether small or large, has in it inherent tendencies for slipshod careless medical work, and neglect of those patients who need medical aid more frequently

4 The broader content of the term "social insurance" as compared with "workingmen's insurance" has already been referred to, and several interpretations have been given Within the working class itself, such an extension of the concept is possible when, in addition to the wage worker himself, his wife and children are included This question has already been raised in New York The American Association for Labor Legislation, through its Social Insurance Committee, has recommended this extension of health insurance, and I take a particular pride in having helped to bring this about But later, when the Mills

Bill, or its equivalent, was introduced in several legislatures, this feature was excluded for fear that the employers would object to any effort to saddle on industry part of the cost of medical aid to the members of the workingman's family. Whatever the economic validity of this objection—and this is no place to go into a detailed discussion of theories of wages—from a point of view of public health it is a very unfortunate limitation of the efficiency of health insurance. The permanent improvement in health conditions of our people must largely come through organized care for the health of the children and the mothers of those children, present and prospective. If both the mothers and children be disregarded, no amount of medical care for the man alone can accomplish any far-reaching result. No one is in a better position to insist on the necessity of extending medical aid to the members of the family than is the medical profession.

5. There is another disputed aspect or branch of health insurance to which objections are raised on various economic considerations and which finds its main support in its effect on public health, and that is maternity insurance. Though the problem of the wage working mother is not as grave in this country as it is in Europe, it is a real and growing one, and even though the circumstances under which women of our wage working class exercise their highest social function of motherhood are not as horrible as those described in a recent English book as typical of the English working women, nevertheless there is much room for improvement, as physicians well know, in maternity care and care of new-born infants. The same abstract consideration is advanced against maternity insurance, that it might encourage the flux of woman into wage labor, but against this there are the very real facts that 100,000 infants die annually in this country under the age of 1 and a good many of them in the very early months of life, because of lack of efficient medical aid and mother's care. There is also the real fact that annually 15,000 women lose their lives in childbirth, largely as a result of inefficient obstetric aid. And as to how much chronic illness of the working woman is due to failure to take the necessary rest after childbirth, only guesses are possible. The medical profession can render an inestimable service by drawing attention to the great necessity of liberal maternity benefits from the point of view of public health.

6. It is a trite observation that before an evil can be officially combated its extent must at least approximately be known. Mortality statistics are the first necessary prerequisite to any scientific effort to reduce mortality. Sickness statistics are equally necessary in any systematic plan to improve health conditions. It is almost futile to secure satisfactory sickness statistics without sickness or health insurance, just as there is not a single country on record which developed satisfactory accident statistics before the advent of compensation. A striking illustration which recently came to my notice may here be quoted. The welfare officer of a very large corporation in the Middle West employing over 15,000 people consulted me in regard to the excessive sickness in their plant. Though any serious trade hazard was absent, the plant showed from 800 to 1,000 absentees a day on account of sickness, though the normal amount should not have exceeded 350. The point of the story is that this abnormal condition was never observed until the corporation had taken out a blanket health insurance policy with a private insurance company covering all its employees, and before three months had expired that company began to object to excessive losses under the policy.

Yet good sickness statistics are not an automatic result of health insurance. England has not yet produced them any more than it has produced any useful accident statistics after twenty years of compensation, nor will sickness statistics ever be perfected without the willing cooperation of the medical profession.

7. The various possible bearings of health insurance on public health have been enumerated here in order to dispel the idea that the preventive feature is automatic and inevitable. The indirect stimulus given by the economic motive to reduce cost need not be exaggerated, but it is real nevertheless. In compensation the entire cost is placed on the employer. It is the employer who feels the new economic pressure and is largely responsible for the "safety first" campaign. Under a proper health insurance scheme the burden of cost is distributed among employer, employee and the state. The economic force is therefore somewhat diffused. In order to retain its effect, democratic and local administration is absolutely necessary, notwithstanding the charges which recently became so popular that democratic administration spells administrative inefficiency. To revert to the illustration just given of the large corporation in the Middle West, further inquiry brought out the information that occupational hazards to health were few, that the plan was a model one, and the employers were deeply concerned in the welfare of their employees. But the excessive sickness was due to epidemics of typhoid, scarlet fever, measles and even mumps, due to conditions of the city sanitation over which the employer had little direct control. The remedy evidently lay in an improvement of general health conditions to be brought about through a political overthrow of the rotten political machine which ran the city. It was stated that it was difficult to wake up the wage workers, who constitute a majority of the voters, to the gravity of the situation. Were there a local health insurance fund in the city which would immediately feel the burden of excessive contributions because of the unusual amount of sickness, then the economic force would have been equally felt by both employers and employees, and it is reasonable to believe that the political problem would have been very much simplified.

Undoubtedly there are a good many other points of contact between the system of health insurance and the problem of public health. But enough perhaps has been said to indicate how carefully the interests of public hygiene must be safeguarded in the health insurance law, if those salutary and far reaching, but less obvious preventive results are to be accomplished. There is no social group that will contribute so much to this end, both through its expert knowledge and the weight of its authority, as the medical profession, for American society never refuses to listen to the collective voice of its medical profession on matters of public health.

It serves no useful purpose to close one's eyes to the real difficulties and take everything desirable for granted. The American wage working class has not yet been educated to the necessity of compulsory health insurance, and even those that have seen the light view it largely from the narrow point of view of immediate financial aid It is on the intelligent and willing cooperation of the medical profession, the natural warden of the health of the nation, that the achievement of these far reaching, if more remote, results very largely depends

HEALTH INSURANCE

ITS RELATION TO THE NATIONAL HEALTH *

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The people of the United States are beginning to wake up to the fact that health is no longer a matter for individual concern alone, but is one for collective action on the part of all persons or groups of persons responsible for conditions affecting health When this idea of the necessity for collective action is thoroughly understood, and it is realized that instead of weakening individual endeavor it will make the individual stronger by making him more economically independent, the American people are going to demand that the responsibility for disease-causing conditions be fixed and that this matter of sickness be provided for in a business-like way and no longer left to haphazard methods

It was not so long ago that the matter of public schools was opposed on the grounds that the idea was too paternalistic in character and too antagonistic to American ideals and principles Now the richest and highest in the social scale are sending their children to the public schools The question of health is more a matter of public concern than the question of education

Relation of the Federal Government to Health—Health is not only a matter for state concern but one for federal consideration as well It is not only a federal question under the "general welfare clauses" of the constitution, but also one under the "interstate commerce clause," since disease is not confined by state lines The position of the federal government in matters of health is very generally recognized, as shown by the many statutes on the subject The act approved Aug 14, 1912, was most sweeping in character It changed the name of the United States Public Health and Marine Hospital Service and gave it authority to study and investigate the diseases of man and conditions influencing their propagation and spread

Health Insurance, the Next Step in Welfare Legislation—The next step in social legislation will be a measure for intelligent relief and prevention of disease All investigations into conditions influencing the propagation and spread of disease go to show that there are three principal groups mainly responsible for these conditions 1 The individual, with the greatest share of responsibility 2 The property owner and employer, with a somewhat less degree of responsibility 3 The public, with a community responsibility There are others who may be responsible, for example, the physician in his employment as family physician or company physician, but on the whole the three groups named are the ones which have by far the greatest financial responsibility Health insurance should by all means include in its operation the responsible groups and properly coordinate the efforts of all agencies at work in this field

At present those interested in remedial proposals are confining their effort to health insurance for industrial workers, and there are many reasons for believing that this will be the next big step in this field and that the day of this achievement is near at hand Such expectation is encouraged by the fact that thirty-four states and territories have enacted workmen's compensation laws within the last few years, that measures for health insurance have been introduced into three state legislatures, that two states have created a commission to study social insurance, and that measures to create such commissions are pending in Congress and one state legislature

The time is therefore at hand when all health agencies and health officials should study this subject of health insurance

OUTLINE DESCRIPTION OF HEALTH INSURANCE

As stated above, the measures proposed include only insurance for industrial workers, and in this connection the groups with a financial interest are limited to the employee, employer and the public As operated under governmental systems, the following provisions are usually made

Membership—All employed persons in certain occupations, and all persons in other occupations earning less than a specified annual income, shall be entitled in case of illness to certain benefits

Benefits—The benefits ordinarily provided are

(*a*) Cash payment for a limited period (usually twenty-six weeks in any twelve months) of a proportion of the wage, or of a fixed sum to employees, when disabled by sickness or nonindustrial accident (industrial accidents are provided for under workmen's compensation laws)

(*b*) Medical benefits, which include adequate medical and surgical care, medicines and appliances in home, hospital, sanatorium, or physician's office, to employees disabled on account of sickness or nonindustrial accident during a limited period (twenty-six weeks in any twelve months)

(*c*) Maternity benefits, which include cash payment of a small sum in case of confinements of employees or wives of employees

(*d*) Cash payment for deaths of insured persons due to sickness or nonindustrial accidents of an amount calculated to cover funeral expenses

Funds—The funds are usually provided by payments from employees, employers and government appropriations In Germany the employee pays two thirds, employer one third, and the government pays for certain expenses of supervision Under the English national insurance act the employee pays four ninths the employer three ninths and Parliament appropriates two ninths In the case of women and persons employed at certain low levels of wages, the payment of employer and Parliament are increased and the proportion paid by employee is decreased

Administration—The administration, both central and local, is usually according to some form of representative government In the local government, in addition to governmental bodies created for the purpose, unions industrial establishments and certain societies are utilized for purposes of the local administration of the funds [1]

It would seem feasible under our form of government that such a system could be provided for interstate employees by federal law and for intrastate employees by state law

To be adequate as a public health measure, a health insurance system should provide for .

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* Read before the Section on Preventive Medicine and Public Health at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

[1] This description is taken from the report of the Standing Committee of the Conference of State and Territorial Health Officers with the United States Public Health Service

1 Adequate cash and medical benefits to all wage earners in times of sickness and death

2 The distribution of the cost of sickness among the groups responsible for conditions causing disease, viz , the employer, the employee and the public

3 The stimulation of the cooperative efforts for disease prevention on the part of the responsible groups named above and the linking of their efforts with existing health agencies

4 The correlation of the work of all agencies working for the relief and prevention of disease

Such a law, if enacted by the federal and state legislative bodies, would have two distinct relations to the national health

As a Relief Measure —By providing relief for all cases of sickness in this group it would have a decided effect in improving the health of the people

As a Preventive Measure —By fixing a definite price for each day lost on account of sickness and by providing a financial incentive to those paying this price to save it by preventing sickness, it would start a movement for preventing disease, just as certainly as the workmen's compensation laws have brought about the nation wide "safety first" movement And properly coordinated with existing health agencies, the machinery would be already at hand for advising and directing this movement with respect to disease prevention

RELATION TO HEALTH AS A RELIEF MEASURE

As a relief measure, adequate cash and medical benefits would be provided for all It has been tentatively estimated that an assessment of 50 cents per employee per week would be ample to provide $1 per day cash benefits, $1 per day for medical benefits and for other necessary expenditures An equitable division of this assessment would not require the worker to pay more than 25 cents per week Such a small sum would place these benefits within the means of even the lowest paid workers The fact is, a very considerable proportion are already paying more than this for what amounts to burial expenses The law should provide that this amount be deducted from the pay roll each week so that the employee would always be in good standing and not suspended for nonpayment of dues, as often happens under voluntary systems In this connection it should be remembered that the lowest paid workers are the very ones who are sick the most often and stand in greatest need of the system, and that if not deducted from the pay roll they are the ones least likely to keep their dues paid

The cash benefit must be sufficient to enable the worker to stop work in order to avail himself of the medical benefits before his health is seriously impaired At present, even in places where free medical service may be had, the worker, who is just earning a living, cannot afford to stop work for if he does, his wife and children would have to go hungry Health insurance would tend to break this vicious circle of poverty causing disease and disease causing poverty

Adequate Medical and Surgical Service —Adequate medical and surgical relief would bring a service to all which is now only within the reach of the rich or of those who are willing to accept it as charity or as patients in teaching institutions Furthermore, it is only in the larger centers that these facilities are usually found Under adequate organization of a health insurance system not only would every workman be entitled to treatment in his home by the physician of his own choice, but hospital and dispensary units would be contracted with or otherwise procured in which scientific treatment of the highest character would be available The insured persons would soon learn to use this improved medical service

When, to this provision, the local administrations of the funds are so well perfected that a sufficient number of visiting nurses are provided and committees composed of insured persons are visiting every sick member, the effect on the sick rate will be such that we will wonder that we ever countenanced present methods

RELATION TO HEALTH AS A PREVENTIVE MEASURE

As a preventive measure the health insurance system should bring to its aid all health authorities, national, state and local, and all volunteer agencies for the relief and prevention of disease

Funds for Health Work —It is worth while to outline here a plan which it is believed will make such a scheme possible Before doing this one must realize that money is the one thing needed by all organizations and individuals engaged in efforts for the relief and prevention of sickness Without money, or with money available only in small and varying amounts and coming at irregular intervals, the work is spasmodic and oftentimes discontinued for longer or shorter intervals Furthermore, much of the time of the workers in this field is taken up with a hunt for contributions or lobbying for appropriations Bearing this fact in mind and remembering that all of the money contributed by employee, employer and state is for the relief and prevention of sickness, some estimate may be made of the amount which will be paid into health insurance funds There were approximately 30,000,000 wage earners in the United States in 1910 according to the census report of that year At a rate of 50 cents per week for each one of these, the health insurance fund would amount to over three quarters of a billion dollars annually Such a sum should eliminate the question of money from the problem and guarantee continuity to any reasonable plan of action

Without going into all of the details of a health insurance system, it is only necessary to know that most plans provide that the employee pay from two fifths to two thirds of the funds, that the employer pay one third to one half of the funds, and that the state pay expenses of supervision or in some plans as much as one fifth of the funds

Administration of Medical Benefits a Connecting Link with Other Health Agencies —The administration as usually provided is central and local, with provision often made for federation of the local bodies The central body is usually a commission made up of representatives of the groups contributing to the funds This commission promulgates regulations, supervises local administration, and decides appeals

The local administration as a rule utilizes business establishments, trade unions, fraternal societies and the like for local administrative purposes, but the exception is ordinarily made that there be at least one local body created of representatives of employees and employers The latter body is usually called the "local fund," and accepts all workers to membership who are not members of some special fund The provision is also usually made that no special fund be recognized until the solvency of at least one "local fund" is guaranteed

In Germany these local bodies are called "carriers," and under the law administer all benefits In England these local bodies are called "approved societies," and administer all except the medical benefits. Under the English act the medical benefits are administered in each county or county borough by a governmental body or insurance committee composed of representatives of the approved societies, the community and the physician. The English law provides for free choice of physician by beneficiaries; the German law does not.

It is through the administration of the medical benefits that it is proposed to link up the systems with organizations for the relief and prevention of sickness.

It is believed that this can be done along three lines: (1) by providing efficient staffs of medical officers in the federal and state health departments to carry into effect the regulations issued by the central governing boards or commissions; (2) by providing a fair and sufficient incentive for the active cooperation of the medical profession, and (3) by providing for a close cooperation of the health insurance system with state, municipal and local health departments and boards.

Corps of Full Time Medical Officers.—In view of the experience in both Europe and America, it would seem best to place the administration of the medical benefits directly under governmental agencies, and to insert a provision that no cash benefits be paid except on the certificate of medical officers of the national or state health departments acting as medical referees under the regulations of the central governing board or commission. Such medical officers should be selected according to civil service methods. Since these officers are the representatives of the health departments in the funds, their selection and appointment should also be based on their knowledge of preventive as well as of clinical medicine. After a probationary period of service satisfactory to the health administration, they should be given permanent appointments, subject to removal only for inefficiency or immoral conduct. One of their duties should be to examine each disabled beneficiary and keep themselves informed as to the progress of his recovery. It is needless to say that the referees should not be permitted to engage in private practice.

Free Choice of Registered Physicians.—With such a check on the payment of cash benefits, the medical and surgical treatment provided for beneficiaries could safely be left to the physician of the patient's choice, and payment made on a capitation basis regardless of whether the patient was sick or well, after the manner of the English national insurance act. This method of selection and payment of physicians for the medical and surgical relief would offer every incentive to them to keep their patients well and to endeavor to please by rendering their most efficient service.

Hospitals and Dispensaries.—In addition to the provision for home treatment by the physician of the patient's choice, provision should be made for hospital and dispensary treatment; and to this end, hospital and dispensary units should be established or contracted with, where the very best medical and surgical service would be available for all insured persons.

Value of Such Plan in Disease Prevention.—The greatest value of such a system of administration of the medical benefits would be in the splendid opportunity it would offer for preventing disease among the insured persons and their families, by the organized corps of medical officers, and the improved medical and surgical treatment. It would be through the corps of full time medical officers of the health department acting as referees that the health insurance system would be linked up with other health agencies. It is not necessary to relate here the advantages which would arise from the visits of such specially trained men into the homes of all sick persons, nor is it necessary to tell how these officers, acting as health officers, could further lower the sick rate. The objection could not be raised that such a corps would be too expensive. It would not require more than one such medical officer to approximately every 4,000 insured persons, and at that rate they could more than save their salaries by relieving insurance funds from paying unjust claims. Furthermore, while an estimate cannot be made of the amount to be saved by their efforts in the way of lowering the sick rate, it is safe to say that it would amount to many times more than the sum of their salaries.[2]

With such a system, funds would be provided and every existing health agency and newly created agencies could be utilized and fitted into their proper places and all work together without duplication of effort. Above all there would be a financial incentive given to each interested group to prevent sickness.

The employer who found that he was contributing more per employee per year than his competitor would doubtless inquire into the cause of the difference.

The employee who learned that his neighbor working in the same kind of trade was paying less dues than himself would also be very likely to inquire into the cause of the difference.

The doctor who found his patients were sick so much that he was not able to attend as many insured persons as his brother doctor would have a financial incentive to look into the cause of the difference and remove it.

The city or town which found that a neighboring city or town was providing adequate hospital and dispensary treatment for its insured persons, and not only obtaining more efficient diagnosis and treatment but obtaining it at a less cost, would doubtless establish similar institutions.

The state which found from the returns that its tax rate for sickness was in excess of a neighboring state would have reason for making this an issue in the next election.

The United States Public Health Service, when the reports, for example, showed a marked difference in the sick rate of an iron and steel town in Pennsylvania as compared with such a town in Alabama, would be very likely to order the responsible officers to Washington to explain the differences.

The final result would be that health would be placed on a competitive basis in the political and business worlds; this, too, after providing for the cooperation of all interested groups through the health insurance administration, so that all the agencies for the promotion of health would work in harmony, forming one complete health machine.

To provide a "health insurance system" simply as a relief measure without adequate preventive features would be a blunder; but enacted together with a comprehensive plan for the prevention of disease, there is every reason to believe that it would prove to be a measure of extraordinary value in improving the health and efficiency of the 30,000,000 wage earners in the United States.

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[2] This description of plan for administration of medical benefits is taken from the report of the Standing Committee of the Conference of State and Territorial Health Officers with the United States Public Health Service.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS RUBINOW AND WARREN

Dr Alexander Lambert, New York Make state officials the referees The referee is then not considered as one of the medical corps Because, just as soon as you make the man who decides whether a patient is sick also decide whether or not he shall go to work, you increase the expenses and put a possibility of undue influence between the patient and the physician which is human and cannot be ruled out In England the panel doctor shoulders the burden of the decision as to whether or not a man shall go back to work, hence the law does not work without friction In Germany nearly 31 to 41 per cent of the questions that are sent to the referee either never come up to him for decision at all, for the patient goes to work, or else he sends them to work immediately

How is the medical profession to be remunerated? All our medical service is a contract The form of contract which is condemned is that which exploits the service of the physician by forcing him for inadequate pay to give neglectful, hurried service to his patients Capitation has been the usual method of remuneration under these contracts

In England there is not sufficient care for the seriously sick, there is not adequate provision for hospital care, and there is no proper provision for a second opinion from some person in consultation Germany takes from 3 to 4 per cent of the wages from the employee, and from the state whatever it costs to give adequate service The English will not give eye-glasses or trusses to the sick when the price of either is not as much as the weekly wage they pay a man when he is on the sick funds Germany, on the other hand, would spend $20 or $30 for an artificial limb to get a man back to work Another form of capitation is pool capitation Each service rendered is charged against a lump sum of money At the end of the quarter the total number of points of service are divided into the total sum of money The point is invariably less the more work you do, the less work you do the more you are paid

Another method of capitation is to divide the total sum of money into (1) a special fund, which pays first for consultations and extra services, and (2) a regular fund to be paid out by regular capitation Another method is to pay by attendance The patients like it best because they get the best service that way However, it does cost more and you cannot estimate the expense in advance so accurately as you can by capitation There are three antagonistic groups in your health insurance law—the interests of the carrier, the workman, and the physician The carriers must give a fair return to the physicians and justice and fairness to the wage earner in the matter of his sick claims They, on the other hand, have a right to demand that the physicians shall give honest service, a willing and an adequate service up to any limit that medicine knows Physicians, on the other hand, must agree that they will help the administration to blot out malingering and valetudinarianism They must give a willing and an adequate service, or they must accept the inevitable control of the layman, who will force them to do it

Dr Eden V Delphey, New York There is no crying demand for compulsory health insurance by masses of the wage earners, in reality they are opposed to any such plan Nor is the rank and file of the medical profession certain that they wish to merge their individuality into a part of a great machine—changing from an individualist to a socialist The health insurance bills introduced into the legislatures of New York, New Jersey and Massachusetts are identical, word for word, and they have all failed of passage At present in New York State the state fund is insuring employees under the workmen's compensation law at a much lower rate than are the casualty insurance companies

In order to be acceptable to the medical profession every health insurance law should contain provisions arranging for 1 Adequate representation on all boards having to do with medical matters By adequate representation is meant an equal representation with the other parties to the contract, the representative should be a physician who has been in the habit of attending sick wage earners 2 The formation of lists or panels containing the name of every legally qualified medical practitioner 3 The sick insured wage earner shall have the right to choose a panel physician from any panel, subject only to the acceptance of the patient by the physician 4 The insurance carrier shall make all contracts for medical attendance and treatment only with organizations composed of one or more panels in the insurance districts, to which organization or association every panel physician in that district must belong

This prevents the insurance carrier from getting poor and needy physicians to compete unfairly with each other for these cases

Other points to be observed are

1 Impartial referees, appointed and paid by the state The decisions of the referees may be appealed from to the council and commission

2 Determination of the maximum number of patients which any one physician can properly attend and treat

3 When less than all the persons earning under the specified amount per year are insured the payment for medical services shall be by capitation When less than the entire number of sick persons are to be insured, the insurance carriers will try to make the medical fee low on the ground that it is at least sure of collection

4 Arrangement for treatment of the sick insured wage earners by specialists

5 Determination of the status and relation of the panel physicians to the hospitals caring for the sick wage earners whether they are to be created or now exist We must consider it as purely a business proposition, and instead of trying to be purely altruistic, we must take care that the medical profession is properly compensated

Dr Benjamin S Warren, Washington, D C I believe that the medical referee will solve many of the problems of administration of medical benefits and bring together the medical profession, link them up with the health insurance system, and with the health departments I want to emphasize the part health departments should play in a health insurance system They should be called on to provide the disease-prevention machinery I do not believe they realize the opportunity which a system of this kind offers to them I understand health departments may be weak in some states and may be opposed by the health insurance system, and meet with a strong opposition in this regard, but that is no reason why they should be eliminated from the scheme They have a definite place in this scheme and the corps of medical referees is the link which should coordinate health departments with health insurance systems A medical referee will be a better referee if he represents an impartial body which has no financial interest in his decisions If he represents the insurance fund, he would be employed by the funds, and would naturally have some leaning that way Even if he should not have such a bias, the employee, or the claimant would presume he had The fact is he could not be a referee if he represented one of the interested parties I believe I am right in that He should be employed by the state and the state should, in this instance be the state health department As to the capitation system of payment of physicians or the visit system payment provision should be made for free choice of physicians With the referee system as a check the medical treatment can safely be left to a physician chosen by the patient and payment made on a capitation basis without regard to whether the insured person was sick or well Such a system of selection and payment would be an incentive to the doctor to please his patient and keep him well Furthermore the medical practitioner will be a check on the medical referee This plan will avoid the defects found in the German and English systems It might be of benefit to limit the number of patients who can select the same doctor This has been proposed in the last draft of the model bill drawn by the Committee of the American Association for Labor Legislation As to the attitude of labor on this question, I will admit that the president of the American Federation of Labor opposed the idea of compulsory health insurance, but he does not oppose the idea of voluntary health insurance at all Furthermore, the Commission on Industrial Relations got out a report which four of its members signed Mr Garretson of the Brotherhood of Railway Conductors, Mr O'Connell and Mr Lennon of the American Federation of Labor and the chairman, Mr Walsh The report recommended a health insurance system for all interstate employees As to the effect on the individual, it is far from being socialistic It is more like the public schools, it encourages individual effort and it promotes individual success by making the individual more economically independent and able to take care of other necessities of life Furthermore, the workman will own these funds, they will be part his, he will be running them and their management will be democratic The workman will be entitled to the benefits which will be in no way a charity

Dr. I M Rubinow, New York Dr Delphey makes certain definite statements, as, for instance that neither workmen, employers nor physicians want this thing

As far as the relation of organized labor to health insurance is concerned, Dr Warren has already answered it I would also like to inform Dr Delphey that after Mr Holland, the chairman of the New York Federation of Labor, had opposed a bill at Albany on March 14, he was reprimanded very severely by the New York Central Labor Union for his attitude in the matter

As to the attitude of employers, the National Association of Manufacturers a few weeks ago came out very strongly in favor of compulsory health insurance applied to all wage workers And as far as the medical profession is concerned, the statement of President Blue yesterday and official statements by the House of Delegates, place the medical profession or at least that part of it represented in the American Medical Association, on record

SOME BACTERIOLOGIC OBSERVATIONS ON EPIDEMIC POLIOMYELITIS

PRELIMINARY REPORT *

GEORGE MATHERS, MD
CHICAGO

During the past months poliomyelitis has been mildly epidemic in Chicago, and the relatively large number of fatal cases indicates that the current infection is highly virulent In the work discussed briefly here the brain and cord were removed under sterile conditions as soon after death as possible, and cultures made immediately Small pieces of tissue, which had been washed thoroughly, were macerated in sterile normal salt solution and the emulsion inoculated into various mediums, as, for example, ascites fluid and ascites dextrose agar containing a small piece of sterile rabbit kidney,[1] ascites dextrose broth, and coagulated normal horse serum, both aerobically and anaerobically The cultures were incubated at 35 C for from one to seven days

In seven of the eight cases examined thus far bacterial growth developed in the aerobic ascites dextrose broth and agar cultures after eighteen hours, while in the anaerobic cultures a definite growth usually did not appear until after from three to seven days, and then often very scantily In six of the seven instances a pure culture of a gram-positive micrococcus was obtained In one instance the cultures gave also a gram-negative bacillus

The coccus grows rapidly in aerobic ascites dextrose broth as a granular material along the side of the tube, gradually settling to the bottom as a white flocculent sediment In the anaerobic cultures made according to the technic of Flexner and Noguchi growth is very slow, after from three to seven days there is a very small amount of sediment and some turbidity in the medium around the tissue Morphologically the organism varies with the medium on which it is grown In ascites dextrose broth it is gram-positive, arranged in pairs and short chains In anaerobic culture it is variable in size, usually very small, gram-positive, arranged in pairs, clumps and chains, with an occasional large form among the minute bodies On blood-agar plates the organism grows in small dry colonies, which produce a faint green halo and a slight degree of hemolysis Cultures from the heart blood and from the cerebrospinal fluid after death thus far have not yielded this micrococcus but it has been obtained from the mesenteric lymph nodes

The organism is of low virulence for rabbits but when injected intravenously in large doses lesions of the central nervous system are produced, with paralysis which may resemble that of infantile paralysis, especially as it affects the extremities Intracerebral injection of the organism soon after isolation has produced paralysis in the monkey The affinity for the central system in rabbits seems to disappear after the third or fourth transplant on artificial mediums Subcultures from a single colony of the coccus have produced paralysis in rabbits within three days after intravenous injection

Questions that arise, the filterability of the organism when grown in various mediums, immune reactions, and other cultural characteristics, are under investigation

In view of the accepted facts in regard to the virus of epidemic poliomyelitis it would seem most reasonable to regard the micrococcus described as a secondary invader, but further work is necessary before its significance can be fully understood The great interest in poliomyelitis at this time and the much greater amount of material now available for the study of the disease in many places other than Chicago are the reasons for this preliminary report

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* From the Memorial Institute for Infectious Diseases Chicago

[1] Flexner and Noguchi Jour Exper Med 1913 xviii 461

A Simple Device for Locating Foreign Bodies in Fingers—Location in a busy clothing manufacturing district gave rise to the necessity for a simple method of determining the presence and location of foreign bodies, such as needles and splinters, in fingers A piece of black woolen cloth 8 inches square was fastened to a piece of adhesive plaster of equal size, and in the center an oval opening was made measuring five-eighths by one-half inch By placing this over an electric light supplied with a reflector and placing the finger over the hole excellent transillumination is obtained and by making pressure with a pointed instrument over the suspected area, the object can be brought out more clearly If the field is rendered bloodless while operating, the finger may be placed over the opening and the object can be again accurately located This device is simple inexpensive and indestructible It is more easily adapted than pocket flashlights etc to the finger and reduces to a minimum the number of cases requiring roentgenograms Daily use for the past six months by several workers in the accident room has proved its efficiency —Roscoe C Webb A B M D, Assistant House Surgeon New York Hospital, New York

Double Impalement.—The *Medicina Contemporanea* of Lisbon reports that a man in a quarry was tamping the charge in a hole he had just drilled when a premature explosion drove the long wooden rod through his neck As he was flung up in the air the rod broke and the other half transfixed him also through the chest The hemorrhage was slight and there was no subcutaneous emphysema or appreciable disturbances with breathing, the arms showed no signs of vascular or nervous trouble and in three months the man was dismissed from the hospital The wood was sawed off close to the skin and the rods were pulled out from the front

Therapeutics

THE TREATMENT OF DIABETES

DEFINITION

Diabetes has been defined as a "specific deficiency of the power of assimilating food"[1] The generally accepted view, based on experimental evidence, refers the deficiency to a diminished functional capacity of the pancreatic islets A person with a normally functionating pancreas may ingest a quantity of food considerably in excess of his energy requirement and completely assimilate all that is digested and absorbed, even though the greater part of the food may be carbohydrate An average adult, performing light work, will ingest and metabolize from 300 to 500 gm of carbohydrate a day With impaired pancreatic function, the organism becomes incapable of assimilating even such quantities of carbohydrate as are contained in a general mixed diet, that is to say, a diet sufficient to cover the energy requirement in which from one half to two thirds of the total caloric intake is in the form of carbohydrate

When there is a deficiency of the power to assimilate carbohydrates, glucose accumulates in the blood, and when the concentration reaches a certain limit, the excess of glucose overflows through the kidneys Thus, *glycosuria constantly occurring in an individual, whose food intake is within the limits mentioned above, is evidence of diminished pancreatic function of the specific type here considered — it is evidence of diabetes*[2]

If the food intake of a diabetic is diminished so as to come within his assimilative capacity, sugar excretion ceases Absence of glycosuria is, therefore, not to be taken as evidence that diabetes is not present, unless the individual is on a full, mixed diet[3]

In diabetes, there is a lowered functional capacity, not only for the assimilation of carbohydrate, but also for protein, since the latter food may yield a considerable amount of carbohydrate in the course of its metabolism

When fat is added to the diet of a diabetic, glycosuria may occasionally occur, although it is very doubtful if fat itself is actually converted into carbohydrate The glycosuria is to be considered rather as a result of stimulation of the metabolism In diabetes the metabolism of fats is affected since, as Naunyn has expressed it, "fats burn in the fire of carbohydrates" With failure to assimilate carbohydrates the "fire" may be but a smoldering one, so that fats are incompletely burned with the formation of acetone, acetoacetic acid, and beta-oxybutyric acid The latter two substances being acids, may, if produced in sufficient amounts, lead to a serious disturbance of the acid base equilibrium of the body known as *acidosis* It is acidosis that is presumably the cause of diabetic coma

OBJECT OF TREATMENT

The object of the treatment of diabetes is to supply a diet that can be metabolized and that will not overtax the weakened pancreatic function Allen has aptly compared the functionally weak pancreas to a "weak" stomach If the latter, with frequent rests, is supplied with food of such quality and such quantity as can be readily digested, it may functionate satisfactorily, and may even be able to digest larger and larger amounts of food, although it will never become a "strong" stomach Continued dietary insults, on the other hand, would further weaken the organ The same holds true for the functionally weakened pancreas, it may be able to provide for the assimilation of a certain amount of food, but if overwhelmed with an amount in excess of its capacity, a progressive diminution in capacity results A weak stomach if overtaxed usually gives warning in discomfort, an overtaxed pancreas gives no such warning

THE ALLEN TREATMENT

The diabetic who constantly indulges in food in excess of his assimilative capacity invariably becomes progressively worse, hence the conception has arisen that diabetes is characterized by an inherent downward tendency As a matter of fact, practically every diabetic has some tolerance for food, and the tolerance is usually sufficient to allow for a great enough food intake to cover the basal energy requirements With proper treatment, it is possible to maintain or even to increase this tolerance This is the underlying principle of the modern treatment of diabetes as formulated by Dr Frederick M Allen[4] On the basis of animal experiments and carefully controlled clinical observations, he has recently proposed a system for the treatment of diabetes that incorporates those features of the older methods that are of proved value, but introduces, in addition, a number of features, some of which are in direct opposition to the older teachings

This treatment may be briefly outlined as follows

1 A preliminary fast is taken until the urine is free from sugar

2 Following the fast, carbohydrate food is gradually added, at first in the form of green vegetables

3 Coincident with the addition of carbohydrate, or in place of it, if the carbohydrate tolerance is very low, protein is added to the diet in small but gradually increasing amounts until glycosuria occurs, or a sufficient amount of protein is taken to cover the basal requirement

4 Fats are added in small amounts during the time of addition of carbohydrates and protein Subsequently, a sufficient amount of fat is added to make up the fuel requirements of the body, provided this amount can be tolerated without the appearance of glycosuria or acidosis

5 Frequent urine examinations are made, either by the medical attendant or by the patient himself, and the appearance of glucose is taken as an indication for a fast of sufficient length to cause a cessation of the glycosuria Feeding is subsequently begun with not

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[1] Allen F M Investigative and Scientific Phases of the Diabetic Question THE JOURNAL A M A May 13 1916 p 1531

[2] Strictly speaking this statement requires some modification for there are certain persons who pass sugar in the urine when the blood sugar concentration is normal or even below normal The glycosuria in such cases seems to be due to an increased permeability of the kidney for glucose This condition of renal diabetes is of infrequent occurrence it is unaccompanied by the characteristic symptoms of diabetes such as polyuria polydypsia and polyphagia the amounts of sugar excreted in the urine are seldom large and bear but little relation to the carbohydrate intake A positive diagnosis of the condition can be made only by demonstrating a normal or low blood sugar content coincident with glycosuria

[3] For the detection of glucose in the urine a very satisfactory reagent is Benedict s (Jour Biol Chem 1909 v 485) modification of Fehling s solution since it is very sensitive to glucose but unlike the original Fehling s solution does not react with a number of normal and accidental urinary constituents The reduction test if slight should be confirmed by the fermentation test

[4] Allen F M Studies Concerning Diabetes THE JOURNAL A M A Sept 12 1914 p 939 Boston Med and Surg Jour, 1915 clxxii 241 Am Jour Med Sc 1915 cl, 480 New York State Jour Med September 1915

more than one half of the carbohydrate contained in the diet at the time of the appearance of glycosuria Subsequent carbohydrate increase is made very gradually

6 At intervals, the patient is fasted for a day or else takes a greatly restricted diet

7 Body fat is reduced to a minimum and the adult diabetic is not allowed to gain weight, children may gain, but the gain must not be adipose tissue

8 Active daily exercise carried to the point of healthy fatigue is advocated

THE PRELIMINARY FAST

The object of the preliminary fast is to remove from the body the excess of unassimilated carbohydrates and to allow for a rest of the overtaxed pancreatic function As a result of the fast, and, indeed, during the fasting period, a proportionately larger amount of carbohydrate may be metabolized Paradoxical as this may appear at first sight, it has been definitely proved by calorimetric observations on severe diabetics With the removal of the unassimilated excess, the organism is better able to assimilate an amount of carbohydrate which it was previously unable to utilize

During the fast, in the majority of instances, there is a decreased production of the potentially harmful aceto-acetic and beta-oxybutyric acids This, presumably, is the result of the relative increase in carbohydrate assimilation

The length of fast required before the urine becomes sugar free is usually less than five days, exceptionally, it may be as long as eight or ten days Water is allowed *ad libitum,* and tea or coffee in moderate amount if desired No sugar or cream is allowed, though saccharin may be used for sweetening A reasonable amount of clear meat broth may be taken after the second day of fasting

Alcohol, in the form of whisky, may be administered, since it does not increase glycosuria, and in certain cases seems to inhibit the production of the acetone bodies The amount of whisky given may be 1 ounce three times daily It may be given in black coffee Alcohol is not an essential in the treatment, and should not be administered to patients in whom it produces such symptoms as burning in the throat, headache and nausea

During the fasting period weak patients should be in bed More vigorous ones should exercise as far as practicable, since by exercise the duration of the fast may be shortened

DURATION OF FAST

The great majority of diabetics may be fasted until the urine is sugar free, without the development of any untoward symptoms or complications Exceptionally marked prostration, nausea, increasing drowsiness and deep breathing (acyanotic hyperpnea) may occur These are symptoms referable to acidosis, and occur coincidently with alterations in the composition of the blood, alveolar air and urine With the appearance of a severe and progressive acidosis, the fast must be terminated for the time being, and treatment directed against the acidosis (This phase of the subject will be discussed under the head of Acidosis) After a period of restricted diet a subsequent fast usually results in a sugar-free urine without the development of acidosis

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLE HAS BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION

W A PUCKNER, SECRETARY

CHLORAZENE—Sodium Para-Toluenesulphochloramine —$CH_3 C_6H_4 SO_2Na\ NCl+3H_2O$

Action and Uses—Chlorazene is claimed to be an active germicide acting much like hypochlorites, but being less irritating Like the hypochlorites it has the advantage over mercuric chloride, zinc chloride etc, that it does not coagulate or precipitate proteins such as blood serum Chlorazene is reported to be practically non-toxic, it is decomposed by the gastric juice, however, and hence should not be administered internally

Chlorazene has been used with success in the treatment of infected wounds particularly where a powerful yet nonirritating germicide is wanted It has been used as an antiseptic mouthwash for the irrigation of the bladder and uterus and as a urethral irrigant

Dosage—Chlorazene is used in 0 5 to 4 per cent aqueous solution The wounds after being cleaned, may be lightly packed with gauze and a rubber tube having previously been inserted, the wound is irrigated at intervals with the chlorazene solution

Manufactured by the Abbott Laboratories Chicago No U S patent U S trademark applied for

Sodium para toluenesulphochloramine was introduced in medicine by Dakin (H D Dakin Brit Med Jour Aug 25 1915 H D Dakin J B Cohen and J Kenyon *Brit Med Jour* Jan 29 1916 p 160) who proposed the names chloramine (which however had been previously applied to the substance NH Cl) and chloramine T

Sodium para toluenesulphochloramine was first made by Chattaway (*Trans Chem Soc* 1905 lxxxvii 153) by the action of sodium hydroxide on para toluenesulphodichloramide It may also be made by dissolving para toluenesulphonamide (1 molecule) in a 5 per cent cold alkaline solution of sodium hypochlorite (1 2 molecule) warming if necessary filtering and adding one and one half volumes saturated sodium chloride solution The crystals of sodium para toluenesulphochloramine are collected washed with sodium chloride solution and dried in the air

Chlorazene is a white crystalline powder having a chlorous odor It may be rendered anhydrous without decomposition by drying at 100 102 C

When a small amount of chlorazene is heated it melts at 160 175 C (with decomposition)

In neutral solutions chlorazene liberates iodine from iodides but *not* bromine from bromides when acidified with hydrochloric acid the bromine will then be liberated

Hydrochloric acid added to a solution of chlorazene produces a white turbidity on heating chlorine is liberated Chlorazene is incompatible with many substances acids (even boric) alcohol and hydrogen peroxide for instance

If about 0 1 Gm of chlorazene be treated with a few drops of sulphuric acid chlorine is evolved but no blackening occurs (absence of readily carbonizable matter)

If 1 Gm of chlorazene is dried at 100 102 C for 2 hours it loses not less than 17 per cent nor more than 20 per cent (water of hydration)

If about 0 5 Gm (accurately weighed) is dissolved in 50 Cc of water 10 Cc of potassium iodid (10%) and 5 Cc of acetic acid (36%) added and titrated with tenth normal sodium thiosulphate the available chlorine should not be higher than 12 6% or lower than 11 5% Each Cc of tenth normal thiosulphate solution is equivalent to 0 0177 Gm of chlorine

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Training Schools for Maimed Soldiers in France—The *Paris Medical* lists the accommodations and the specialties taught at each of the thirty-three professional training schools and business colleges that have been organized for wounded soldiers at as many different points in France, besides the eighteen agricultural schools or model farm schools Two of the latter are devoted entirely to cheese making another to osiericulture (growing willows for wickerwork), and the others to training in the care of sheep, cattle vineyards, etc The card of each applicant must state the residence town before the war, and the origin and nature of the crippling wounds and also the school or profession he is most interested in

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SATURDAY, SEPTEMBER 30, 1916

THE BASIS OF ANAPHYLACTIC SPECIFICITY

In their pioneer investigation on the phenomena of anaphylaxis Rosenau and Anderson pointed out that the reaction is "quantitatively" specific, injections of horse serum sensitizing to horse serum only Later they[1] demonstrated further that an animal could be rendered sensitive at one and the same time to blood serum, egg white, and milk, acting specifically to each on second injection In the earlier work in this field it seemed likely that the specificity, as a rule, is one of species The protein of any animal was regarded as specific for the proteins of its particular species generally, there being definitely similar characteristics in the body proteins of animals of like species which, though chemically indefinable, are nevertheless delicately determinable by biologic reactions

The question was accordingly early raised as to whether the specificity of the anaphylactic action depends primarily on the chemical structure of the protein used or on its biologic origin What is the real nature of biologic specificity? Does it imply identity of chemical constitution? A decided step in advance in this field of inquiry was taken when Wells and Osborne began the study of the anaphylactic responses to vegetable proteins of widely varying origin and diverse physical and chemical properties The plants afford a much wider opportunity for the prosecution of researches of this nature inasmuch as their proteins can be isolated with somewhat greater ease and in a state of greater purity The omnipresent distribution of blood proteins in organs of animals greatly complicates the study of anaphylaxis with proteins derived from such tissues

Experiments with the vegetable proteins have clearly shown that preparations of unlike properties but derived from the same plant by no means always react anaphylactically to each other Biologically related proteins may thus fail to respond to each other On the other hand, it has become evident that typical and severe anaphylaxis reactions may sometimes be obtained when proteins isolated from seeds of different genera are employed for the sensitizing and intoxicating doses in the same animal In nearly every case such reactions have been developed only by preparations of proteins so nearly alike that differences between them have not been detected by physical or chemical means, or the differences found have been so slight that it seems highly probable that the proteins concerned are very similar in chemical constitution In a few cases, however, positive reactions have been obtained between proteins which chemical tests indicated have distinct differences in their constitution Such reactions can be attributed to the existence of common reactive groups in these different compounds [2]

As the result of their most recent studies in this field Wells and Osborne[3] have still further fortified the biochemical basis of the specificity of anaphylactic reactions As chemically similar proteins from seeds of different genera react anaphylactically with one another, while chemically dissimilar proteins from the same seed in many cases fail to do so, they conclude that the specificity of the anaphylaxis reaction depends on the chemical structure of the protein molecule Whether the specificity which is revealed by the anaphylactic reaction implies identity of chemical constitution, or the presence of identical groups, or radicals, in the molecules of the proteins inducing this reaction cannot be definitely settled, Wells and Osborne tell us, until some method is discovered by which the chemical individuality of protein preparations can be positively demonstrated

THE REAL MEANING OF FRESH AIR

Somehow the veil of mystery always casts a peculiar influence on most persons belonging to modern society There is a subtle charm and potency in many unexplained manifestations of nature or traditional mysterious prejudices Something of this sort, though beneficial rather than baneful to mankind, still seems to attach itself to the current impressions about "fresh air" Frederic S Lee[1] writes

> In these days, we hear much of "fresh" air and its merits We have fresh-air funds fresh-air schools, and fresh-air babies All are commendable, but while giving to our funds, opening our schools, and putting our babies out of doors, let us clearly understand what constitutes fresh air The freshness of so called "fresh" air lies, not in more oxygen, less carbon dioxide, less organic matter of respiratory origin, and the hypothetical presence of a hypothetically stimulating ozone, but rather in a low temperature, a low humidity, and motion So far as fresh air itself is concerned, there seems to be nothing more mysterious about it than this

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[1] *Rosenau M J and Anderson J F Jour Infect Dis*, 1907 iv

[2] Wells H G and Osborne T B Is the Specificity of the Anaphylaxis Reaction Dependent on the Chemical Constitution of the Proteins or on Their Biological Relations? Jour Infect Dis 1913 xii 341

[3] Wells H G and Osborne T B *Anaphylaxis Reactions Between Proteins from Seeds of Different Genera of Plants* Jour Infect Dis 1916 xix 183

[1] Lee F S Recent Progress in Our Knowledge of the Physiological Action of Atmospheric Conditions read before the American Pediatric Society Washington D C, May 8 1916 Science Aug 11 1916 p 183

What, then, are the specific consequences of a vitiated atmosphere, or, as one may more properly express it in the light of present day knowledge, of objectionably high temperatures and humidity? This is the natural formulation of the inquiry on the part of a medical man, for the interest of the thoughtful physician is perhaps more often centered in the causes and manifestation of disease or malaise than in the explanation of beneficial procedures or remedial agents Some of the aspects of the modern problems of ventilation and the physiologic action of atmospheric conditions, particularly the work of the New York State Commission on Ventilation,[2] have been discussed in THE JOURNAL[3] Hot, humid, still air is harmful in various ways It affects the circulatory system, the rate of the heart beat being increased in warm, humid air, and decreased in cool, dry air Eastman and Lee have seen the pulse rate increase by 39—from 67 to 106—as the temperature of the air surrounding the subject rose from 23 3 to 43 3 C (74 to 110 F), and the humidity from 58 to 90 per cent Observations on the response of the vasomotor mechanism indicate that a distinct vascular benefit follows from exposing the body to cool, dry air The influence of the atmospheric conditions on the respiratory system are varied in character A moderate degree of heat and humidity seems to be without effect on the rate of respiration, but more extreme conditions cause a quickening of the breathing, and this is probably accompanied by more shallow respirations We have previously[3] referred to the evidence presented by Miller and Cocks showing that exposure to heat increases swelling, redness and secretion in the nasal mucosa, and these effects are more marked when the humidity of the air is high Exposure to cold reverses these effects It is not unlikely that some of the extreme conditions produced render the membranes favorable for the development of infectious micro-organisms At any rate, there can be little question that the mucous membrane of the respiratory tract is markedly affected by atmospheric conditions

Furthermore, the investigations of Lee and Scott[4] at Columbia University have indicated that the distaste for physical labor which is felt on a hot and humid day has a deeper basis than mere inclination—the muscles themselves are actually incapable of performing as much work These observers state that there is evidently correlation between the decreased muscular power and decreased blood sugar, the muscle fuel This suggests the existence of a physiologic adaptation such that "when it is physiologically fitting that the animal reduce muscular exertion to a minimum, in order that the output of heat may be as low as possible, as in a hot and humid environment, the supply of fuel will be correspondingly lowered"

It is customary to speak of the body temperature as constant, though diurnal fluctuations are known to exist under conditions which are in every respect normal Lee[1] has called attention to recent findings of the New York commission with respect to an apparent relationship between the body temperature of man and the temperature of his environment, even under the ordinary conditions of living Unsuspected, for example, was the fact that during summer months the rectal temperature of its subjects at 8 a m, living in their own homes, was conditioned by the average atmospheric temperature of the preceding night If the temperature had been warm, the body temperature in the morning was high, if cool, the body temperature was low The variation was about 0 55 degree C (1 degree F) for 20 degrees of atmospheric temperature In any event, the body temperature was lowered by confinement in an atmosphere of 20 C (68 F) and 50 per cent relative humidity, and raised by confinement at 23 9 C (75 F) with the same humidity, or still more by 30 C (86 F) with 80 per cent humidity The actual average body temperatures found at these stages, respectively, were 36 7, 36 9, 37 4 C (98, 98 5, 99 3 F)

In extreme atmospheric conditions, greater elevations of temperature are known to arise[5] A stay of about three hours in an atmosphere averaging 40 4 C (104 7 F) in temperature and 95 per cent relative humidity may produce a rise of several degrees in the body temperature of a normal adult man These suggestive facts raise the question as to the possible control of body temperature in febrile diseases by regulation of the temperature of the surrounding air

YEAST NUTRIMENTS IN BREAD-MAKING

A few years ago one of the large American baking companies noticed that when identical raw materials (except the water) were used in the manufacture of their bread in different cities, it was necessary to change the quantity of yeast as well as the fermentation period in order to produce a standard product On investigation by a group of workers at the Mellon Institute,[1] it was found that the activity of the yeast was affected by the mineral salts in the natural waters, which content, of course, was different in the various localities These workers therefore studied in detail the action of various salts in bread-making They report that the salts of mineral acids, such as chlorids, nitrates, nitrites and sulphates, exert practically no influence, except when combined with a cation which in itself has an effect The presence of carbonates particularly are detrimental, as they neutralize the acids in the dough and thus interfere with the progress of fermentation Surprisingly, neither phosphates nor the ordinary potassium salts exerted any appreciable influence The common occurrence of the alkali-earth salts — especially of calcium — in natural waters prompted their exhaustive investigation It was demonstrated that the chlorid, bimalate, sulphate, nitrate and soluble phosphates of calcium each gave a decided increase in the volume of the loaves and the gas production when incorporated in the bread by the use of water containing a small amount of the salt, and employing the usual quantity of yeast The texture, flavor and general appearance of the bread were improved In case of the chlorid of calcium the volume of the loaf was increased a greater amount, due to its action on the gluten of the dough as well as the yeast The accelerating effect of the calcium salt — or any other yeast nutriment — can be taken advantage of by reducing the amount of yeast used and still having available the same volume of evolved gas as in the ordinary procedure of more yeast but no nutriment salt

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[2] For a general presentation of some of the results of the commission, including C E A Winslow D D Kimball F S Lee J A Miller E B Phelps E L Thorndike and G T Palmer see Am Jour Pub Health 1915, v 85

[3] Ventilation editorial THE JOURNAL A M A, Nov 7 1914 p 1672 Heat Humidity and Working Power, Jan 30 1915 p 444 Atmospheric Temperature and Immunity Reactions May 13 1916 p 1553

[4] Lee F S, and Scott E L Am Jour Physiol 1916 xl 486

[5] Haldane J S Jour Hyg, 1905 v 494

[1] Kohman Henry A Hoffman Charles Godfrey Truman M Asche Lawrence H and Blake Alfred E On the Use of Certain Yeast Nutriments in Bread Making Jour Ind and Eng Chem September, 1916, p 781

In connection with the water research, the utilization of stale bread offered an important problem One utilization method investigated was such that glutamic acid was formed in relatively large amounts The effect of the glutamic acid on the bread was beneficial, increasing the gas production of the yeast This nutrient action on the yeast was found to be due to the nitrogen content of the glutamic acid Subsequently the common mineral salts of ammonium were used, and the results were similar to those in the case of the calcium salts The authors next worked with a mixture of calcium chlorid and ammonium sulphate One gram of calcium chlorid plus one-half gram of ammonium sulphate to one kilogram of flour caused a saving of approximately 50 per cent of yeast

There are two distinct objects to be accomplished in the fermentation of bread (1) the aeration of the bread — by means of the evolved gases, (2) the maturing or aging of the bread — a secondary action of the yeast The Mellon Institute investigators found that as small an amount as 0 015 gm of potassium bromate (used in the water) per 1,000 gm of flour will age the dough and decrease the necessary amount of yeast by about 15 per cent After many experiments the authors conclude that *50 to 60 per cent of the yeast may be saved* by using in the water a mixture of 0 015 gm of potassium bromate, 1 2 gm of calcium chlorid and 0 5 gm of ammonium sulphate, that the proper use of the nutrient salts maintains more uniform bread and better quality, flavor, texture and "bloom", that the initial fermentation is slowed, which has an interesting significance in that about *2 per cent of the sugar (calculated on the entire flour content) is kept from being converted* into needless carbon dioxid and alcohol In the state of Kansas alone it is estimated this would cause a saving of 80,000,000 pounds of sugar a year

However, the mere addition of these minerals is of considerable importance from a medical point of view In our modern methods of milling the greater part of the mineral constituents of wheat is lost in the preparation of white flour As shown by Teller,[2] seven-eighths of the phosphoric and eleven-fourteenths of the potash and lime contents are found in stock feed — a discarded portion of the wheat in flour-making Hence a partial restoration of these salts is highly desirable This latest research on bread seems to indicate that if the public would cast away the aesthetic requirements for white flour and use whole wheat flour instead, the result would be better bread, at less expense, and above all a more healthful product

THE INFECTIVITY OF THE MOSQUITO IN MALARIA

The potentialities for harm which human warfare harbors appear to be greater and greater in harmony with the progressive evolution of human knowledge. The arrow and the spear were replaced by the rifle; and this in turn has assumed a minor role in competition with the rapid-fire machine gun, which finds a thousand marks where formerly a single hit was recorded Somewhat similarly in the warfare of our insect enemies on mankind their potency for hurling the shafts of infectious disease is becoming more and more formidable as our appreciation of their ways and means of attack is enhanced When Ronald Ross discovered at Calcutta, July, 1898, that the spores of malarial parasites were concentrated, not in the intestine, as he and Manson had supposed, but in what proved to be the salivary gland of the mosquito, the stronghold of an enemy of mankind was located In his own words

> The exact route of infection of this great disease, which annually slays its millions of human beings and keeps whole continents in darkness, was revealed These minute spores enter the salivary gland of the mosquito, and pass with its poisonous saliva directly into the blood of men Never in our dreams had we imagined so wonderful a tale as this[1]

Today these interesting facts no longer satisfy the needs of the defender in the warfare against malaria The whole question of the importance of the mosquito as a vector of malaria, writes an expert in the Public Health Service, resolves itself into a consideration of numerical potentialities How many mosquitoes succeed in obtaining a blood meal, and of these what percentage succeeds in developing the malarial cycle? Ronald Ross estimates that only one out of twenty-four anophelines manages to bite a human being, and this proportion is greatly reduced, economically measured, because less than 25 per cent succeed in the role of carriers Roughly considered, then, we may look on one out of every 100 female anophelines in a malarial country as a possible infecting agent This one mosquito, regarded as a health disturber, must be evaluated in terms of certain biologic factors in order to appreciate the potency and extent of its parasitism in the conveyance of malaria [2]

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[2] Ark Agri Expt Station, Bull 42

[1] Ross R Jour Roy Army Med Corps London, 1905 iv, 572

It is now positively known that the bite of a single Anopheles can cause malarial fever Whether the same insect, which may be able to bite several persons, can convey infection repeatedly without again obtaining blood from an original source of infection is evidently a question of considerable moment, for with the chances of disease transmission enormously increased by the possibility of successive infectibility the necessity for the intensive elimination of the mosquito becomes emphasized more prominently than ever The individual insect becomes a veritable machine gun in point of danger In precisely such problems the knowledge of the habits of our insect enemies has become of great importance to man The crux of the situation has been outlined as follows

> A mosquito which, ticklike, satisfies its food demands by a prolonged, uninterrupted aspiration of blood and resumes its normal function as regards procreation without a second blood meal, does not play a role which need attract the attention of the sanitarian Opposed to this form, however, a mosquito like the plasmodia-bearing Anopheles shows its evil possibilities at the outset by its insatiable food requirements It may demand three complete meals of blood before providing for one of several egg layings It may be in the habit of taking a short meal and, interrupting itself automatically, leave one host in order to rest or to attack another host Although it has been found that an anopheline mosquito may survive for a period of sixty-seven days without partaking of blood, a typical member of the genus requires a blood meal approximately every three days in order to thrive and perpetuate its kind When a full meal is not taken, due to an interruption on the part of mosquito or host, it is necessary to consummate its purpose in a further attack on the same or a different host In this way the anopheline mosquito becomes an important factor from the point of view of disease transmission Bearing this in mind, the sanitarian must then determine to what extent a mosquito which has already contaminated its gustatory parts in biting a malaria-diseased human being becomes a menace to the public health

The U S Public Health Service[2] has recently conducted a series of Anopheles infectivity experiments on human subjects They show in no less than eleven experiments that short exposure to bites, where the mosquitoes are interrupted in their feeding, is sufficient to cause successful transmission of the disease It merely serves to corroborate a now classic story to report that in seventeen of the experiments in which human beings were employed to test the infectibility of *Anopheles punctipennis* with *Plasmodium vivax*, fourteen cases of malarial fever resulted Statistics like this approach the degree of perfection that is found in quantitative chemical experiment in the laboratory The sporozoites in the mosquitoes used developed from ten to twenty-two days after the definite hosts were given an opportunity to bite a patient harboring a scanty number of mature tertian gametocytes

In an attempt to infect several persons with a single specimen of *Anopheles punctipennis,* one mosquito proved to be the sole infective agent in one experiment and one proved to be the sole infective agent in three experiments These two specimens when applied to the same person transmitted the infection in five cases, while one of them used with a third mosquito succeeded in infecting four persons In these experimental inoculations it was demonstrated that in nine instances in which two mosquitoes succeeded in transmitting malaria at least one of the pair was proved to be capable of causing the disease when used singly In all of the successful inoculations only tertian infection was reproduced

There is no proof that the mosquito is in any way deleteriously affected by the malarial parasite, but the ability of an infected insect to strike repeated blows before its power for harm has been lost can scarcely be doubted The experiments to which we have referred recall the unheralded heroism of the persons, including many physicians, who have offered themselves for inoculation in the cause of the advancement of knowledge These newest contributions from the government service are among the last which received the guidance of the late Surg R H von Ezdorf, U S P H S,[3] an esteemed expert on yellow fever and malaria, whose untimely death was a distinct loss to the Public Health Service and to sanitary science

Current Comment

THE SUPRARENALS AND THE THYROIDS

Suggestions of possible interrelations among the ductless glands have not been lacking in recent years Various functional changes in the body have been explained by assumptions of more or less complex pluriglandular activities resulting in the promotion or the retardation of the performance in question in accord with the relative participation of the different endocrine structures concerned in the hypotheses Attention was recently directed to the accumulated evidence pointing toward a definite influence of sympathetic impulses over thyroid activity [1] It is known that the internal secretion of the suprarenal glands, or epinephrin, will have the same effect in the body as sympathetic impulses Cannon and Cattell[2] have recently demonstrated that injection of a small dose of epinephrin evokes a marked action current in the thyroid gland This is taken by them, in harmony with observations on the behavior of glands when tested by the electrical method, as a sign of glandular functioning[1] Stimulation of the nerve to the suprarenal gland so as to cause its secretion to be poured forth into the blood stream will also evoke a characteristic electrical change in the thyroid This electrical change does not occur if the return of blood from the abdomen is prevented, but takes place promptly when the pent blood is released Furthermore, it fails to appear after stimulation of the nerves if the suprarenal glands have been removed previously An influence of suprarenal secretion on thyroid activity seems thus to be definitely established Cannon and Cattell point out that apparently the amount of suprarenal secretion liberated by the splanchnic stimulation is sufficient to excite the thyroid gland in a manner similar to its excitation by sympathetic impulses and by epinephrin injections They add that obviously the efficiency of sympathetic impulses in provoking activity of the thyroid might be greatly augmented by the simultaneous secretion of the suprarenal glands It is regarded as significant that both the thyroids and the suprarenals would be stimulated simultaneously by the diffusely distributed impulses of sympathetic neurons Attention has been called to the emergency function of the suprarenal glands in times of emotional stress, as distinguished from a purely routine function[3] There is doubtless what may be called a routine performance of the thyroid which serves to keep metabolism normal in some of its aspects But because this gland is subject to sympathetic impulses and because it is now demonstrated to respond to such stimulation with great promptness,[1] Cannon ventures the belief that it also has an emergency function — one that is exercised particularly in emotional crises That this behavior is an exaggerated form of the routine activity of the gland is at present, of course, purely a speculation

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[2] Mitzmain, M B Anopheles Infectivity Experiments An Attempt to Determine the Number of Persons One Mosquito Can Infect with Malaria Pub Health Rep 1916 xxxi, 2325

[3] An obituary notice appeared in The Journal A M A Sept 16, 1916 p 893

[1] The Innervation of the Thyroid Gland, editorial, The Journal A M A Sept 23, 1916 p 954

[2] Cannon W B, and Cattell, McKeen Studies on the Conditions of Activity in Endocrine Glands III The Influence of the Adrenal Secretion on the Thyroid, Am Jour Physiol 1916 xli, 74 Cannon, W B Studies of Ductless Glands by the Electrical Method Proc Nat Acad Sc 1916 ii 319

THE AURICULAR CONTRACTIONS OF THE HEART

The discovery by His of a distinct band of muscular fibers passing from the auricles to the ventricles — the auriculoventricular bundle — furnished an anatomic basis for the physiologic behavior of the heart This bundle forms the only continuous muscular tissue between the auricles and ventricles, its destruction results in complete abolition of the normal sequence of beat between these two sets of chambers in the heart Such information, together with what were at first purely experimental studies, has contributed largely to the present widespread interest in the cardiac arrhythmias and the manifestations of heart block which only a few years ago were rarely spoken of in clinical medicine The discovery of the "pace-maker" of the heart in the mass of Purkinje tissue commonly designated the sino-auricular node has furnished further information of a specific character Here at each beat the contractions start, spreading along the auricular muscle in all directions When the sino-auricular node is put out of action the rhythmic sequence of the heart beat may still be continued, its function being taken up by the auriculoventricular node According to the preponderance of opinion each beat of the heart begins by a simultaneous contraction of both auricles, associated with a retraction of the auricular appendages The contraction, which is followed by that of the ventricles, lasts about a tenth of a second Bachmann[1] has recently pointed out, however, that if the rate of propagation of the excitatory process through auricular muscle is the same throughout, it may be expected that parts at a sufficiently greater distance from the sino-auricular node than nearby parts, would show an appreciable time difference in the onset of their contraction Thus the left auricle, though in direct and common muscular connection with the right auricle, may be expected to contract later than the right It is generally taught that the contractions of the two auricles are synchronous Bachmann has submitted the question anew to experimental investigation in the physiologic laboratory at the Emory University School of Medicine in Atlanta, Ga He has found that the time of onset of right and left auricular contraction, contrary to general belief, is not synchronous The excitatory wave originating in the sino-auricular node reaches the right auricle sooner than the left, hence the right auricle contracts an appreciable time before the left The time difference averages 0 013 second The most important path of conduction between the two auricles appears to be the interauricular band Its special importance is demonstrated by the effects of crushing the band, the conduction being delayed from 3 to 4 6 times the normal average The interauricular band has not the same importance relatively to the auricles that is possessed by the auriculoventricular band, as crushing does not cause a complete block Its importance lies in the circumstance that its fibers form the most direct interauricular path and that the rate of conduction is highest along this path

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[3] Cannon W B Am Jour Physiol 1914 xxxiii 356 Newer Views of the Functions of the Adrenals editorial The Journal A M A July 25 1914 p 322

[1] Bachmann G The Inter Auricular Time Interval Am Jour Physiol 1916 xli 309

Hospital-Home for Children with Inherited Syphilis—It was Professor Welander of Stockholm who first organized a special asylum for children with congenital syphilis, where they could be kept for three or four years and given thorough treatment His *Lilla Hemmet* was opened in 1900 with accommodations for five children In 1910 another was opened, equipped for fifty or sixty children The institutions have proved extremely successful, not only in improving the lot of the children by thorough treatment in a hygienic environment, but by preventing their infecting others A similar 'home" was organized at Copenhagen in 1905, with places for ten children, one in Christiania, equipped for fifteen, and in 1909 a similar institution was opened at Berlin In 1913, under the initiative of Professor Ehlers, it was decided to organize a larger home of the kind at Copenhagen, and seventy committees throughout the land collected funds for it and the opening occurred recently It is arranged to care for fifty-two children at a time and represents an expenditure of 3 000 kroner ($804) per bed, the grounds having been donated by the city In his opening address, Ehlers made a plea for the state to assume the support at the "Welanderhjemmet' of children unable to pay their way

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest such as relate to society activities, new hospitals education, public health, etc)

DISTRICT OF COLUMBIA

"Patent Medicine" Advertising Improves—A special committee of the Retail Merchants' Association on 'patent medicines" and their advertisement has recently reported that the newspapers of Washington have as a whole made more progress in purging their columns of objectionable advertisements of quack medicines than an equal number of newspapers in any other city of the same size in the United States That there is still room for improvement is shown by the committee s appeal to all daily papers to refuse to print false medical advertisements Dr Lyman F Kebler of the department of agriculture was on the committee to represent the interests of the public in the matter, and acted as chairman The association unanimously adopted the report

A Municipal Dairy Urged by Milk Producers—After an exhaustive investigation into prevailing local methods of producing and distributing milk, in the hope of finding some way by which the distributor might pay the producer a better price for his milk without increasing the price charged the consumer, the Maryland and Virginia Milk Producers Association has come out flatly in favor of a municipal dairy The project which the association has formulated and is prepared to back calls for the establishment of a municipal dairy, to be provided by the district government to handle, pasteurize, inspect grade and bottle all milk, and it is suggested that in connection with this projected dairy it would be feasible and would ultimately result in great economy to create also a single cooperative or even publicly owned and controlled distribution service

ILLINOIS

Smallpox Closes Schools—The discovery of seven cases of smallpox in West Kankakee September 22 resulted in the issuance of an order by Dr Charles E Crawford of the state board of health to close the Central and Longfellow schools and St Joseph s Seminary for two weeks

Psychiatric Institute Transferred—The State Psychiatric Research Hospital Kankakee, has been closed by order of the state board of administration and its offices have been transferred to the Cook County Psychiatric Hospital, Chicago The institution is to be under the charge of Dr H Douglas Singer Hospital

Typhoid Fever—Up to date there have been fourteen deaths from typhoid fever in the Elgin epidemic Steps have been taken to protect the milk supply of Chicago, a large amount of which is obtained from the territory around Elgin At present there are said to be 180 cases of the disease and nurses have been called from Chicago and surrounding towns to assist in the care of the sick——At Lincoln there are said to be about thirty cases of typhoid fever, with three deaths, at the State School and Colony

Chicago

Personal—Dr John Clarence Webster is ill with cholecystitis in the Royal Victoria Hospital at Montreal, and will probably not return to work in Chicago this fall——Dr Frederic A Besley has been appointed professor of surgery in Northwestern University Medical School and a member of the attending surgical staff at Mercy Hospital——Prof Clarence D Blachley formerly superintendent of the Bureau of Social Surveys in the Chicago Department of Public Welfare has been appointed professor of social science at Goucher College Baltimore——Dr Sidney D Jones has been placed in charge of the Fort Dodge (Iowa) Clinical and Roentgen-Ray Laboratory, succeeding Dr Thomas H Glenn

Insanity Survey—A comprehensive survey of the facilities for dealing with mental diseases and mental deficiency in Cook County is to be begun at once by Herman M Adler, Boston, assistant professor of psychiatry in Harvard University under the auspices of the National Committee for Mental Hygiene The purposes of the inquiry is to obtain a report based on scientific facts as to the care mentally ill persons are receiving in the county institutions and whether proper steps are being taken to lessen the number of such cases by the application of approved modern treatment The committee on local and state charities of the Chicago City Club and Illinois Society for Mental Hygiene are cooperating in this work

MARYLAND

Personal—Dr J Hubert Wade, Boonsboro, has been appointed a member of the Penal Board of Maryland by the governor This board has control of the House of Correction and the Maryland Penitentiary——Dr Henry Lee Smith of the Medical Reserve Corps, United States Army, who has been on duty as medical examiner in the mobilization camp at Mt Gretna, Pa since July, has been appointed camp surgeon——Dr James J Mills instructor in eye surgery at the Johns Hopkins Hospital, has finished a special assignment for the French government at Biarritz and will return to this country within a few weeks He has spent the past six weeks treating the wounded eyes of French soldiers——Dr Alfred W Brown, medical supervisor of the Public Athletic League Baltimore, has resigned and will enter the practice of medicine in British Columbia

Typhoid Fever Situation Improved—An improvement in the typhoid fever situation in Baltimore has been reported by Dr William T Howard, Jr , assistant commissioner of health Thirty-three cases have been reported since last Saturday and there have been two deaths There were forty-eight cases and three deaths for the week ending September 15 Dr John D Blake considers the situation very encouraging, since September is in the typhoid season Dr C Hampson Jones of the state department of health declared that there is less typhoid in the counties than during last year That human carriers are largely responsible for the spread of typhoid fever is a statement made by the health department in a recent *Bulletin* A number of rules were also laid down by the department in the *Bulletin* as a guide to families in which typhoid fever occurs These rules will be strictly enforced by the department

Infantile Paralysis Situation in Maryland—Several new cases of infantile paralysis have been reported during the past week, but on Friday the records at the city health department were clear for the first time in five weeks, no cases having been reported that day On account of one case in Brunswick, children under 13 years of age have been forbidden to attend moving picture theaters——The city health department permitted children in the higher grades to attend school on Monday, September 25, but children in the kindergarten, primary department and grades up to the sixth will be kept at home until there is no longer any danger of the spread of infantile paralysis Dr C Hampson Jones Baltimore, head of the department of communicable diseases of the state board of health, is in favor of the county schools opening at once——Dr Warren H Hoak acting assistant surgeon of the United States Public Health Service, has joined P A Surg James R Hurley in Baltimore and is assigned to night duty at Union Station

NEW YORK

Westchester Must Purify Sewage—A notice has been served on the members of the Westchester County Board of Supervisors and Manager John J Brown of the Bronx Valley Trunk Sewer Commission to the effect that the United States government would bring suit to force the removal of the sewage pipes from the Hudson River at Yonkers unless the county built a filtration plant A similar action was brought in 1912 but was dismissed on the signing of a stipulation that the commission would purify the sewage before it reached the Hudson River

New York City

Personal—Dr Herbert R Brown, assistant director of the Massachusetts State Department of Health Boston, has accepted the position of pathologist to the Rochester Homeopathic Hospital, Rochester, N Y——Dr Fred H Albee has arrived home from the war zone

Hospital in Need—The New York Ophthalmic Hospital announces that it has experienced a lack of funds and a falling off in subscriptions since the beginning of the war and that unless it receives financial aid it will be compelled to close its doors Two of the free clinics for children have already been closed

Start Cooperative Charity Campaign—The Federation for Support of Jewish Philanthropic Societies, which has recently been organized for the purpose of collecting and receiving donations for member societies or for equitable distribution among them, has begun, under the leadership of Felix M

Warburg, a campaign to increase the yearly total of Jewish benefactions to $2,000,000 It is believed that philanthropies will be much benefited by a polling of their interests and that the distribution of benefits will be much more businesslike

The Infantile Paralysis Epidemic—During the week ending September 23, the number of new cases of infantile paralysis has shown a considerable decrease Whereas during the previous week the number of new cases reported daily ranged between thirty and forty during the week just passed they averaged below thirty September 22, there were only twenty cases reported with six deaths The total number of cases to date is 8 861 with 2,226 deaths The number of cases in the state outside the city of New York has shown a similar decrease——A conference was held in the office of the mayor between Dr Haven Emerson, commissioner of health, and William G Wilcox, president of the board of education, for the purpose of reaching a final decision as to the advisability of opening the schools on September 25 in view of the fact that the parents' association had made a vigorous protest against this step during the week It was decided that the children would not be exposed to danger in coming together in the schoolroom No children or teachers from infected houses will be permitted to enter the schools——The brace fund has reached about $40,000 and the goal now set is $50,000 It is said that this will be none too much, as there will be about 5,000 cripples to be cared for

The Communicability of Poliomyelitis—A recent *Bulletin* of the department of health publishes a preliminary study of 7,000 cases of infantile paralysis with reference to the number of cases of the disease occurring in a family There was only one case in a family in 6,521 instances, there were two cases in a family in 205 instances, three cases in twenty families, four cases in one family and five cases in one family It is pointed out that this does not answer the question as to the communicability of the disease, for it might be possible that in a large percentage of the families included in this study there was only one child It is hoped that further study will throw more light on this subject by including in the figures the number of children exposed in a family Another group of figures which takes into consideration 7,496 cases of infantile paralysis shows that 751, or 10 per cent, were found among children under 1 year of age, 5,662, or 15 5 per cent, among children between 1 and 5 years of age, 812, or 10 8 per cent, among children between the ages of 6 and 10 years, 142, or 1 9 per cent, among children between the ages of 11 and 15 years, while 129, or 1 7 per cent, occurred among persons more than 16 years of age Children between the ages of 2 and 3 years were most often the victims, there were 1,714 of these Of children between 1 and 2 years old, 1 541 were victims, while those from 3 to 4 years numbered 1,278, from 4 to 5 years the number was only 618

OREGON

State Society Meeting—The forty-second annual meeting of the Oregon State Medical Association was held at the German House, Portland, September 13 to 16, under the presidency of Dr William Kuykendall, Eugene, and the following officers were elected president, Dr Robert C Yenney, Portland, vice presidents, Drs Leo W Chilton, Canyon City, Everett Mingus, Marshfield, and William J Johnson, Corvallis, secretary, Dr Clarence J McCusker, Portland, and treasurer, Dr Katherine C Manion, Portland

Personal—Dr Grover C Bellinger Salem, was reelected assistant secretary-treasurer of the Oregon Association for the Prevention of Tuberculosis at its first annual meeting in Portland, September 13——William T Foster, president of Reed College, Portland was elected president of the Oregon Social Hygiene Society at the annual meeting held in Portland, September 8——Dr Luther H Hamilton, Portland, has been elected president, Dr Herbert S Nichols, Portland, secretary, and Dr Urling C Coe Bend, treasurer of the Oregon State Board of Medical Examiners

PENNSYLVANIA

Personal.—Dr Claude D Roop superintendent of the Lancaster County Hospital and Insane Asylum, has resigned to become assistant physician to the Norristown Insane Hospital

Infantile Paralysis—From July 1 to September 16, 1 278 cases of infantile paralysis have been reported to the state department of health with 307 deaths Of these cases 719 were reported from Philadelphia and 559 from other parts of the state The state commissioner of health announces the opening at Rosemont of a new hospital for the treatment of acute cases of infantile paralysis

Coroners Elect Officers—At the annual meeting of the Pennsylvania State Coroners' Association held in Harrisburg, September 13, the following officers were elected Dr Charles L Ashley, Plymouth, president, S C Jamison, Allegheny, and James T Heffran, Washington, vice presidents, and G H Moore, Washington, secretary-treasurer The association adopted resolutions declaring that all coroners should be physicians Wilkes-Barre was selected as the next place of meeting

New State Officers—At the sixty-sixth annual meeting of the Medical Society of the State of Pennsylvania held in Scranton September 18 to 21, a program was adopted which contemplates demanding the amplification of the Harrison Narcotic Law so that the state may protect itself in holding physicians, druggists and dispensers responsible not only for the distribution of drugs, but also of alcohol, amendments to the compensation law increasing the remuneration allowed for medical attention to injured employees in the event of the necessity of a major operation, extending this limit from $75 to $200, and prolonging the treatment period without compensation to the disabled employee from thirteen to forty days, a milk hygiene law which will safeguard the milk supply at the source by state inspection of dairy farms at places where milk and milk products are shipped The following officers were elected president, Dr Charles A E Codman, Philadelphia, president elect, Dr Samuel G Dixon, Harrisburg, vice presidents, Drs John B Corser, Scranton, Joseph W Albright, Muncy, J Treichler Butz, Allentown, and Herbert B Gibby, Wilkes-Barre, secretary, Dr Cyrus Lee Stevens, Athens (reelected), assistant secretary, Dr Clarence P Franklin, Philadelphia (reelected), treasurer, Dr George W Wagoner, Johnstown (reelected), manager of sessions and exhibits, Dr William H Cameron Pittsburgh (reelected), and trustees for three years, Drs Theodore B Appel, Lancaster (reelected), Horatio W Gass, Sunbury (reelected), and William W Lazarus Tunkhannock. The next meeting is to be held Sept 24 to 27, 1917, at Pittsburgh

Philadelphia

Urge Dairies to Use Paper Milk Bottles—Sanitary paper milk bottles will soon follow the sanitary paper drinking cup into public favor if plans to amend the law governing the delivery of milk in glass bottles are successful

Memorial Laboratory to be Established—A memorial research laboratory to the memory of Dr Earl C Peck, first assistant resident physician at the Philadelphia Hospital for Contagious Diseases who died recently from anterior poliomyelitis, is urged by Dr John B Carrell, Hatboro, as a fitting memorial to Dr Peck

Medico-Chirurgical College Transfers Realty—One of the final transactions of the merger of the Medical School of the University of Pennsylvania, the Medico-Chirurgical College, and Jefferson Medical College was consummated, September 21, when the real estate holdings of the Medico Chirurgical College were transferred to the trustees of the university The college buildings assessed at $375 550 and two four-story houses, assessed at a total of $54 000 were conveyed for a nominal consideration These will eventually be conveyed to the city by the university and the buildings demolished, as they are in the line of the new parkway

RHODE ISLAND

Books Donated for Library—The directors of the Redwood Library and Atheneum Newport, at a meeting September 19, received the report of the committee regarding the recent donation of books from the medical library of the late Dr Rufus E Darrah and after thanking Mrs Darrah for the gift, recommended that the report be formally adopted by the directors and that copies thereof be communicated to Mrs Darrah and to the lay and medical press

Health Survey—P A Surg Paul Preble, U S P H S, with the assistance of Sanitary Engineers John K Hoskins and Harry R Crohurst, with the cooperation of the state board of health began a general survey of the streams and harbors food and drinking supplies and general health aspect of Rhode Island with especial reference to the prevalence of typhoid fever

SOUTH CAROLINA

Hospital Notes—The Clinton Hospital was incorporated, August 14 with a capital stock of $15,000 Dr L St Clair Hays will be in charge of the institution The medical board is composed of Drs Thomas L W Bailey, James W Davis, J Lee Young and L St Clair Hays ——The cornerstone of the new Pryor Hospital, Chester, was laid with Masonic ceremonies recently The building is four stories in height, with basement, fireproof throughout, will cost $60,000, and is expected to be ready for occupancy this fall

Sanatorium Needs Funds—The Hopewell Sanatorium, which is operating under the direction of the Greenville County Antituberculosis Society, has made an appeal for funds for its maintenance, and asks for annual dollar subscriptions for the support of the institution

UTAH

New State Association Officers—At the twenty-second annual meeting of the Utah State Medical Association held in Salt Lake City, September 12 and 13, under the presidency of Dr Eugene W Whitney, Salt Lake City, the following officers were elected president, Dr Samuel C Baldwin, Salt Lake City, vice presidents, Drs Joseph R Morrell, Ogden, Philemon M Kelly, American Fork, and David C Budge, Logan, and treasurer, Dr Thomas A Flood, Salt Lake City Dr W Brown, Ewing, holds over as secretary, and councilor from the third district, Dr Horace G Merril, Provo The next meeting is to be held in Salt Lake City

CANADA

Sanatorium Acquired—The Rocky Mountain Sanatorium, Frank, Alta, has been acquired from the French-Canadian Collieries Company by the Dominion Hospitals Commission as a sanatorium for the treatment of soldiers affected with tuberculosis and who belong to the western provinces of Canada It contains sixty rooms In conjunction with the Ninnette Institution in Manitoba and the Transquille Sanatorium near Kamloops, B C, the new sanatorium will provide for all those afflicted with the disease west of the Great Lakes

Personal—Surg-Gen Guy Carleton Jones, Ottawa, Ont, director of the Canadian Medical Services, has had conferred on him the insignia of the Legion of Honor by the president of France in recognition of valuable services ——Dr Norman E McKay, Halifax, N S, has been elected president of the Provincial Medical Board of Nova Scotia, in succession to Dr John Stewart, Halifax, who is abroad at the front with Dalhousie University Hospital Unit Dr McKay and Dr Willis B Moore, Kentville, N S, will represent the board on the Medical Council of Canada ——Dr Deloss E Bell, Brockville, has been appointed physician to the Board of the Workmen's Compensation Act of Ontario ——The Distinguished Conduct Medal has been awarded to Hon Lieut-Quartermaster W G Ruswell, C A M C, for untiring work during many days in directing the evacuation of wounded ——Dr Edward S Hasell, who has been medical superintendent of the Provincial Royal Jubilee Hospital, Victoria, B C, since 1897, has been appointed chief medical superintendent of Military District No 11 He has also received the appointment of medical superintendent of the military hospitals in British Columbia He will be assisted by an advisory board composed of Drs Roderick L Fraser and Oswald M Jones Victoria, B C ——Dr Herbert S White McBain, Mich, has joined the Canadian Army Medical Corps

GENERAL

Southwestern Physicians to Meet—The tenth annual session of the Medical Association of the Southwest will be held in Fort Smith, Ark October 2 to 4 The first of these days will be devoted to clinics at the various hospitals

United States Census Bureau Gets New Chief Statistician—Dr William H Davis Boston, has been appointed chief statistician division of vital statistics, United States Bureau of the Census Mr R C Lappin, who has filled the office since the resignation of Dr Cressy L Wilbur, Albany, N Y, several years ago, has been assigned to other duty Dr Davis has been the vital statistician of the Boston Health Department for some years, and was appointed to his present office on the basis of civil service examination

Virginia Will Bar Children from Infected States—All Pennsylvania Railroad trains carrying children under 16 years of age from New York, Pennsylvania and New Jersey into the state of Virginia are liable to be quarantined as a result of a conference in Philadelphia, September 16 between the officials of the railroads and Dr Roy K Flannagan, assistant state health commissioner of the state of Virginia Dr Flannagan visited Philadelphia to determine why New York, Philadelphia and Norfolk trains carry children in violation of the rules placed in effect, August 25 He stated that 50 per cent of the cases of infantile paralysis in Virginia today came from the North, some from New York and some from Philadelphia

Bequests and Donations—The following bequests and donations have recently been announced

Social Workers Tuberculosis Sanatorium Milwaukee $1,750, the proceeds of Tag Day September 4

Fund to buy braces for children crippled by infantile paralysis New York a donation of $2 000 from Mrs Pembroke Jones Newport R I

Hospitals of Monmouth County N J a donation of $2 500 from President Wilson

St Joseph's and St Elizabeth s hospitals Chicago, each $5,000 by the will of Mary J McLaughlin

Ward for infantile paralysis in Surgical Wing of the University of Pennsylvania Hospital Philadelphia a donation of $1 000 from State Health Commissioner Samuel G Dixon conditional on the raising of $4 000 additional

To found the John Graves Forbe Memorial Hospital Georgetown Ky, a donation of $1 000 by Archer M Huntington New York

Health Experts to Meet—The forty-fourth annual meeting of the American Public Health Association will be held at Cincinnati, October 24 to 27, under the presidency of Dr John F Anderson New Brunswick, N J On the first afternoon there will be a symposium on mental hygiene The address of welcome and the president's address will be delivered on the same evening, and there will be a symposium on public health nursing on the second morning Outside of the general session the work of the convention will be divided into public health administration, laboratory, vital statistics, sanitary engineering, sociology and industrial hygiene

Instructors at Army Medical School—The following officers of the Medical Corps have been ordered to duty in the faculty of the Army Medical School, Washington, D C, for the session beginning October 16 Col William O Owen, professor of medical department administration, Lieut-Col Champe C McCulloch, Jr, professor of military hygiene, Maj Carl R Darnall professor of sanitary chemistry, Maj William H Moncrief, professor of operative surgery, and Capt Philip W Huntington, professor of roentgenology The Army Medical School, for many years located at 721 Thirteenth Street, N W, was recently transferred to the building formerly occupied by the district commissioners, at 462 Louisiana Avenue

Sectional Conferences on Tuberculosis—The National Association for the Study and Prevention on Tuberculosis announces that in October five conferences on tuberculosis will be held in various parts of the country The Mississippi Valley Conference will meet at Louisville, Ky, October 4 to 6, the New England Conference in New Haven, Conn, October 12 and 13, the Southern States Conference at Albuquerque, N M, October 12 and 13, the North Atlantic Conference in Newark, N J, October 20 and 21, and the Southern Conference at Jackson, Miss, October 30 and 31 A feature of the programs of all these conferences will be informal round-table discussions led by experts in various lines These discussions will make the conferences virtually institutes in instruction on methods and programs of antituberculosis work

Wellcome Prizes—The Henry S Wellcome Prizes, offered through the Association of Military Surgeons, viz, first prize, a gold medal and $300, and second prize, a silver medal and $200, are open for competition to all present and former medical officers of the army, navy, Public Health Service, Organized Militia, U S Volunteers, Medical Reserve Corps of the army, navy and of the officers reserve corps of the U S Army These prizes will not be awarded until after Dec 15, 1916, the council of the association having voted to extend the time of entry of competing essays to that date because so large a number of the members are now with the troops on the border Several essays have already been received and a large additional number are expected to be entered for such honorable and valuable prizes The subject for the first prize is The Most Practicable Plan for the Organization, Training and Utilization of the Medical Officers of the Medical Reserve Corps U S Army and Navy and of the Medical Officers of the Officers Reserve Corps U S Army, in Peace and War The subject of the second prize is 'The Influence of the European War on the Transmission of the Infections of Diseases with Special Reference to its Effect on Disease Conditions of the United States" Essays (five copies signed by nom de plume) not to exceed 20 000 words exclusive of tables, must be addressed to the Secretary of the Association of Military Surgeons, U S Army Medical Museum, Washington, D C

OUR TROOPS ON THE BORDER

Writing Materials for Our Troops—The American Red Cross has shipped to the Mexican border, for free distribution among the American soldiers, 80,000 sheets of writing paper, a like number of envelopes and 50 000 postal cards

Red Cross Nurses Sent to Mexican Border—To reinforce the Army Nurse Corps on the Mexican border the war department has obtained from the American Red Cross 125 graduate Red Cross enrolled nurses for assignment to camp and base hospitals distributed along the frontier from Nogales Ariz to Brownsville, Texas Fifteen of these 125 are representatives of civil hospitals in which American Red Cross base hospital units have been organized The nurses were selected by Miss Jane A. Delano chairman of the National Committee on Red Cross Nursing Service, whose department has over 7 000 enrolled graduate nurses While Colonel Kean has organized twenty-five base hospitals, only eight of these will be represented in this detail of 125 nurses

FOREIGN

The American-Scandinavian Foundation—Dr Christen Lundsgaard left Copenhagen, September 21, for New York He is the first Danish physician to receive an allowance from the Niels Poulsen American-Scandinavian Foundation He will study at the Rockefeller Institute and later will travel and pursue research work at other institutions in the United States

Death in the Profession Abroad—Sir Thomas Lauder Brunton M B, C.M., Edinburgh 1866, M D Edinburgh 1868, M R C.P London, 1870, F R.C.P London 1876, aged 72, consulting physician to St Bartholomew's Hospital London, widely known as a writer and teacher of medicine who was knighted in 1900 and made a baronet eight years later, a member of many scientific societies in Great Britain and on the continent, and the recipient of a number of honorary degrees Gulstonian lecturer in 1877 and Croonian lecturer in 1889, died at his home, September 18

WAR NOTES

Gifts for War Relief—The New Year Book of the Carnegie Endowment for International Peace states that the United States has given to the sixty principal war relief societies $28 896 277, or about one twentieth of the amount spent by the allies alone for specific war munitions

Ambulance Service in the Balkans—The American Ambulance Field Service announces the formation of an ambulance section to serve with the allied army in the Balkans The section will include thirty ambulances, together with a repair car kitchen car tents and other accessories

American Red Cross Readmitted to Austria-Hungary—It is announced that Austria-Hungary has decided to grant permission for the reestablishment of American Red Cross units in the dual monarchy which were withdrawn several months ago because of lack of funds for their maintenance.

Surgeon Wanted for Service in Serbia—The Franco-Serbian Field Hospital of America, whose office is at 17 West Thirtieth Street New York expects to send a field hospital unit to Serbia this month The unit will be established close to the front and will be practically a first aid dressing station At present an equipment of twenty cots is planned but this will be enlarged in the near future. A competent young surgeon is desired to take charge of this unit He would be expected to make a contract for at least six months and will receive a salary of $100 a month and traveling expenses

Physicians for War Zone.—A large number of practitioners of Indianapolis Lafayette, Richmond and Terre Haute, Ind have endorsed the plan of the American Physicians' Expeditionary Society to send American physicians to care for the sick and wounded in the base hospitals of the warring countries and also approve the plan to send a unit of physicians and nurses from Indiana In connection with this plan a committee has been appointed to raise $16 000 to meet the expenses of organizing equipping and maintaining for six months an Indiana unit to be selected by the society to care for the sick and wounded in base hospitals of Germany and Austria——A unit of twelve physicians is expected to be ready to leave Philadelphia next month for the war front under the Physicians Expeditionary Committee.——A unit of fifty physicians is being organized for war service with the entente allies in Europe——A Red Cross unit has been organized in New York by Dr Earl B Downer which will sail to Christiana Norway, and then will proceed to Petrograd and to Caucasus

LONDON LETTER

London Sept. 11, 1916

The War

DEATH FROM SUBSTITUTES FOR SALVARSAN

Substitutes for salvarsan have been produced in this country since the war cut off the supply of the drug from Germany as stated in a previous letter to The Journal. These substitutes have been carefully investigated by experiments on animals and have been pronounced equal to salvarsan in safety by a Committee of Investigation appointed under the National Insurance Act There seems no reason to doubt this conclusion but unfortunately many fatalities have shown that salvarsan is not a safe drug The following case shows that the same applies to its substitutes A verdict of death from misadventure was returned at an inquest on a man aged 40 who died in Guy s Hospital After a Wassermann test an injection of kharsivan which is supposed to be identical with salvarsan was given When he was having the second injection he became excited complained of headache and subsequently became unconscious Dr Spilsbury the pathologist said that death was caused by coma due to a cerebral affection and accelerated by the injection of kharsivan which, in his view, was as good as salvarsan Opinions differed however as to whether neokharsivan was not better still This new preparation which is coming onto the market contains a smaller percentage of arsenic. The coroner said this was the third case he had had in a period of over two years The importance of this fact will be realized when one considers that his district is only a portion of London

Anthrax in Shaving Brushes

A short time ago I reported in The Journal a number of cases of anthrax due to shaving brushes the infection being traced to a cheap kind of brush on sale in a certain shop The disease has again been caused by an infected shaving brush—this time at Newcastle Investigation of the case which occurred in that city incriminated a cheap horsehair shaving brush one of a large consignment newly arrived from Japan Immediate steps were taken by the health authorities to trace the infected brushes and it is believed that practically all of them have been recovered These brushes are described as having black japanned wooden handles and a thin brush of white hair (They sell for about 4 cents each) A large proportion of those confiscated showed the presence of anthrax germs It was found that parcels of the brushes had been sent to various parts of the country some fifty gross going to Newcastle. A warning was at once sent by the Local Government Board to the health officers in each of the towns that had received them

The Organization of the Nursing Profession

As long ago as 1887 the desirability of state registration of trained nurses was brought forward by the late Sir Andrew Clark physician to the London Hospital In 1895 the subject was taken up by the British Medical Association which unanimously adopted a resolution in favor of the project This was endorsed by the Association in 1904 and again in 1906 In 1905 a Committee of the House of Commons reported in its favor In 1907 a bill was passed in the House of Lords, but on account of opposition failed to pass in the House of Commons After further struggles a bill was introduced in the House of Commons in March 1914 by a majority of 311 against 82 This bill provided for the appointment of a general council to form a register of nurses whose course of training and examinations it would regulate and supervise. The council would appoint examiners and inspectors publish an annual register and take proceedings against persons guilty of offenses under the act. It would also decide on the suspension or removal from the register of the name of any nurse for any breach of the rules or for disgraceful conduct. It would have power to recognize hospitals or institutions as approved training schools for nurses Besides the general register of women nurses there was to be a supplementary register of asylum nurses The bill also provided for the admission to the register of persons holding certificates of training from institutions approved by the council or under the Local Government Board or from the Admiralty or the Royal Army Medical Corps Persons producing evidence satisfactory to the council of training or who had been three years in bona fide practice as a nurse or employed as a nurse in a naval or military hospital would also be eligible The council was to consist of twenty-one persons, three appointed by the Privy

Council (one a woman), three physicians appointed by the Local Government Board (one for each division of the Kingdom), three physicians appointed by the British Medical Association (one resident in England, one in Scotland, and one in Ireland), one physician appointed by the Medico-Psychological Association, one physician appointed by the fever hospitals recognized as training schools, eight registered women nurses (to be elected as direct representatives by the nurses on the register), one registered physician or registered male nurse (to be elected as a direct representative of the registered male nurses), one registered mental nurse (to be elected as a direct representative of the registered mental nurses) The title of 'registered nurse" would be protected, the bill providing penalties for its improper use An early passage of the bill seemed assured Then war broke out and all controversies attending the bill had to be dropped However, this war has increased the demand for nurses tremendously and has rendered the question of organization more urgent A scheme for voluntary organization has therefore been brought forward by the leaders of the nursing profession and by leading persons interested in the profession which has resulted in the founding of the College of Nursing in March of the present year Its objects are to maintain a register of trained nurses, to establish a uniform curriculum of training, and to raise the standard of training The college is managed by a council of not less than fifteen or more than thirty persons, two thirds of whom must be trained nurses

PARIS LETTER

Paris, Aug 31, 1916

The War

THE WAR AND CLINICAL THERMOMETERS

As a result of the report on the inexactitude of clinical thermometers, read by Mr Woog at the sitting, June 27, the Academie de medecine appointed a commission to study the question Mr Grimbert, the reporter of this commission, believes that it is necessary to prohibit the sale of all thermometers the precision of which is not guaranteed by official control The war having suppressed the importation from Germany, France depends for her supply on Switzerland, England and the United States, and there has been a considerable rise of price without a corresponding guarantee of precision According to Mr Woog, the central pharmacy of the army has been obliged to refuse as much as 80 per cent of the shipments offered The French manufacturers have assured the commission that they will soon be in a position to supply clinical thermometers at the same price as those obtained from Germany before the war, and that they are prepared to submit to official control Furthermore, the director of tests at the Conservatoire des arts et metiers believes that it is feasible to reduce considerably the fee paid for testing thermometers

THE BELGIAN SCHOOL FOR THE MUTILATED

Like France, Belgium considers it her duty to do what may be possible to permit war cripples to reoccupy a social position worthy of them Thanks to the generosity of Baron Baeyens his estate of Notre Dame de-la-Mer, situated at Port-Villeg department of Eure, 7 kilometers from Vernon, has been placed at the disposition of Mr de Broqueville for this purpose In this way, the Belgian effort has not, like ours been dispersed over a number of small schools, but concentrated in one adequate central institution Situated on a plateau 150 meters above the valley of the Seine, the Belgian institute for the reeducation of professional cripples is composed of eighty separate constructions built with double walls, like the English field hospitals The buildings extend over an area of 17 000 square meters and shelter dormitories, administration buildings and workshops At present 1,200 cripples are in residence On their arrival, they are carefully examined and a record is drawn up stating their previous occupations and present functional abilities An attempt is made to establish what particular kind of work suits them best In order to learn one of the forty-eight trades taught in the institute, the pupils enter the workshops which are twenty-five in number They have electric and internal combustion engines and a perfect supply of tools The whole system is organized on an industrial basis Although it has only been established one year, the value of its production is 950 000 francs ($183 350) In addition to the workshops, there is an agricultural area for training purposes The agricultural lands amount to 30 hectares The standing crops at the present moment represent a value of 40,000 francs ($7,720), and the school has already taken such fruits and vegetables as are necessary for its own use The poultry farming section has produced, since last March 3,000 chicks There is an apiary of more than thirty hives Rabbit rearing is also followed with excellent results Finally, the gardens which surround this little colony, serve for the teaching of horticulture

NEW OCCUPATIONS FOR THE WOUNDED

The first session of the Auch-Beaulieu center for agricultural reeducation, founded by the general council of the department of Gers and the ministry of agriculture, has just come to its close The object of this center is to readapt to rural life those who have been seriously wounded in the war and the results obtained have been entirely satisfactory Each pupil, according to his physical and intellectual ability, has been trained for an agricultural specialty such as steward, farmer, gardener, dairyman, poultry farmer, bee farmer, repairer of agricultural machines, etc Already the majority of pupils have obtained situations in accordance with their ability, which, in certain cases, are superior to those held before the war A complete course of professional photography under the auspices of the syndicated photographers of France has just been established at the special school for cripples Before the war the corporation of photographers was invaded by foreigners At present there are a great many vacant posts in every district This profession, which requires more taste than strength, is particularly adapted to cripples The apprenticeship is comparatively short, which is an advantage for the wounded, who are anxious to be able to gain their own living

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Marriages

James Francis Lawler, M D, Beverly, Mass, to Miss Mary Gertrude Creedon, formerly of Southbridge, Mass, at Methuen, Mass, September 7

James Salmon Wilkinson, M D, Germantown, Philadelphia, to Miss Gwendolyn M Devoll of Philadelphia at Branchtown, September 11

Washington Merscher, M D, Germantown, Piladelphia, to Miss Theda S Dengler of Germantown in Lebanon, Pa, September 2

Arrol V Brumbaugh, M D, to Miss Edna Alice Mason, both of Milwaukee, Wis, at Beaver Dam, Wis, September 4

Percy Betterman Battey, M D, Independence, Iowa, to Miss Sara H Hillary, at Council Bluffs Iowa, September 7

Leander Ernest Trevethan, M D Vale Tenn, to Miss Ada Lee Duncan of Hollow Rock, Tenn, September 10

John Theodore King, Jr, M D, Baltimore, to Miss Charlotte Markell Baker of Frederick, Md, September 14

Carl Davis Render, M D to Miss Dorothy June Antis, both of Oak Park, Ill, in Milwaukee, November 1

James Pendleton Erskine, M D, New York, to Miss Jennie F Brower of Utica, N Y, September 14

Thomas Goodell Charles, M D, Beardstown, Ill, to Miss Nita Robertson of Virginia, Ill, September 12

Louie John Beyer, M D, Little River, Kan, to Miss Gwendolyn Markle of Lyons, Kan, August 16

Rudolph Frederick Decker, M D Byron Neb, to Miss Theodora Prohl of Mendota, Ill, September 20

Abram Samuel Tepper, M D to Miss Esther Nebenzahl, both of Far Rockaway, N Y September 11

Angeline Mildred Lemon, M D, Cleveland, to Mr Harold Faunce Dumbleton of Detroit September 5

Bernard O Bendexson, M D, Beachwood, Wis, to Miss Olive Stoupe of Milwaukee Wis, recently

Lawrence D Alexander, Jr, M D, to Miss Lita Berry Lindey both of New York, September 9

Arthur Caldwell Gillam, M D, to Miss Anna Suzanna Maurer both of Chicago, September 14

Ira Thurman Mann, M D High Point, N C, to Miss Bessie Marguerite Pitts, September 26

Charles A Reed, M D to Mrs June C Dickey, both of Minneapolis, September 13

James R Lewis M D, Grinnell, Iowa, to Miss Harriet Kemp, at Denver, recently

Joseph Fraenkel M D, New York, to Mme Ganna Walska September 7

Deaths

Henry Clay Baum, M D, Syracuse, N Y , University of Michigan, Ann Arbor, 1883, aged 57, a Fellow of the American Medical Association, professor of dermatology and syphilology in the College of Medicine of Syracuse University, consulting dermatologist to the Onondaga Orphan Asylum, dermatologist and syphilologist to the Syracuse Hospital for Women and Children, St Vincent's Orphan Asylum, House of Providence and Syracuse Free Dispensary, dermatologist to St Joseph's Hospital, formerly major surgeon of the Second Infantry, N G, N Y , died at his home in August

Richard Mott Moore, M D, Rochester, N Y , University of Buffalo, N Y, 1878, aged 59, a Fellow of the American Medical Association, one of the foremost practitioners of Rochester, a member of the board of health of Rochester in 1893, for several years chairman of the Monroe County Milk Commission and once president of the Rochester Academy of Medicine, who had been ill for five years with a disease of the circulatory system which necessitated several operations, and finally amputation of the leg above the knee, died at his home, September 13, from angina pectoris

William Keller, M D, Princeton, Ill , St Louis College of Physicians and Surgeons, 1884, aged 73, formerly a Fellow of the American Medical Association, a member of the Illinois State Medical Society, a graduate of medicine in the University of Tubingen, Germany, about 1865, surgeon in the Prussian army during war between Germany and Austria, died at his home September 7, from septic pneumonia, following a carbuncle of the leg

Elijah Miller Reed, M D, Baltimore, University of Maryland, Baltimore 1864, aged 72, formerly a member of the Medical and Chirurgical Faculty of Maryland and professor of nervous diseases and medical jurisprudence in Maryland Medical College, Baltimore, at one time an officer of the Medical Corps of the army, died at his home, September 12, from cerebral hemorrhage

William A Brown, M D, Monticello, Ark , University of Tenn, 1869, aged 73, formerly a Fellow of the American Medical Association a member and once vice president of the Arkansas Medical Society, president in 1914 of the Arkansas Fourth Councilor District Medical Society, a Confederate veteran, died at his home, September 6, from heart disease

Leo Dinkelspiel, M D, New York, College of Physicians and Surgeons in the City of New York, 1883, formerly a Fellow of the American Medical Association, captain in the medical corps of the Serbian army during the war with Bulgaria in 1884, died at the home of his sister in New Rochelle, N Y, September 11, from cerebral hemorrhage

John Joseph Thompson, M D, Webster, Mass , Jefferson Medical College, 1887, aged 56, a Fellow of the American Medical Association, town physician of Webster for fifteen years, chairman of the school committee for ten years and trustee of the public library for twenty years, died at his home, September 16, from cerebral hemorrhage

Edgerton Clapp David, M D, Picton, Ont , University of Michigan, Ann Arbor, 1877, aged 66, for many years a practitioner of Bad Axe, Mich, and Buffalo, who has been an inmate of the Rockwood Asylum, Kingston Ont, on account of mental disease, for eighteen years, died in that institution, April 20, from septic endocarditis

Emma Albertina Walser Townsend, M D, New Brighton, N Y Women s Medical College of the New York Infirmary for Women and Children, New York, 1888; aged 51, who is said to have been the first woman intern in the New York Hospital, for several years a member of the local board of education, died at her home, September 13

Albert James Mackay, M D, Peacham, Vt , University of Vermont, Burlington 1897, aged 50, a Fellow of the American Medical Association, member of the legislature in 1915-1916, died Brightlook Hospital, St Johnsbury, Vt, September 11, two days after an operation for intestinal disease

John H Wilson, M D, Bethlehem, Pa , University of Pennsylvania Philadelphia, 1860, aged 80, a Fellow of the American Medical Association, surgeon of volunteers throughout the Civil War, one of the best known practitioners of the Lehigh Valley, died at his home, September 12

Daniel Hennessey, M D, Bangor, Me , Geneva (N Y) Medical College, 1866, aged 79, a Fellow of the American Medical Association, a member of the surgical staff of the Aid-de-Camp Hospital on David's Island N Y, after the Civil War, died at his home, September 10

Charles L Hall, M D, Mount Jackson, Va , Washington University School of Medicine, Baltimore, 1876, aged 65, formerly a practitioner of Lost River, W Va, and a member of the West Virginia House of Delegates from Hardy County, died at his home, September 5

Enoch T Jones, M D, Hampton, Ark , Memphis Hospital Medical College, Memphis, Tenn, 1901, aged 49, formerly a Fellow of the American Medical Association and once president of the Calhoun County (Ark) Medical Society, died at his home, September 9

James W Dreyfus, M D, Louisiana, Mo , Washington University, St Louis, 1877, aged 65, formerly a Fellow of the American Medical Association, a member of the Missouri State Medical Association, died at his home, August 19, from cerebral hemorrhage

Francis S Merriam Meyers, M D, Mt Vernon, N Y , Women's Medical College of the New York Infirmary New York 1894, aged 46, a member of the Medical Society of the State of New York, died at her home, September 14, from heart disease

George Henry Turner, Jr, M D, Hartland, Me , Medical School of Maine, Brunswick, 1903, aged 38, formerly a member of the Maine Medical Association and a practitioner of Portland, died at his home, September 9, from acute gastritis

Thomas Fitzgibbon, M D, St Francis, Wis , Rush Medical College, 1882, aged 62, a Fellow of the American Medical Association, formerly professor of gynecology in the Milwaukee Medical College, died at his home, September 17

Malcolm Eugene Douglass, M D, Guilford, Md , Hahnemann Medical College, Philadelphia, 1880, aged 69, formerly a practitioner of Dansville, Va , died in his office, September 13, from heart disease

Isaiah W Willits, M D, Bloomsburg, Pa , Jefferson Medical College, 1875, aged 73, a member of the Medical Society of the State of Pennsylvania, died at his home, August 24, from heart disease

Seth C Felt, M D, Long Beach, Calif , Detroit College of Medicine, 1876, aged 77, a veteran of the Civil War, until 1903 a practitioner of New Boston, Mich , died at his home, September 5

Charles H Whiting (license, Maryland), a practitioner for forty-nine years, a veteran of the Civil War, died in the University Hospital, Baltimore, September 11, from cerebral hemorrhage

George Watson Stevenson, M D, Cleveland, Western Reserve University, Cleveland, 1872, aged 69, a Fellow of the American Medical Association, died at his home, August 30

John O Guhman, M D, St Louis Missouri Medical College St Louis 1889, aged 46, a Fellow of the American Medical Association, died suddenly at his home, September 11

Walter L Davis, M D, Cincinnati, Miami Medical College, Cincinnati, 1866, aged 72, for more than thirty years alienist of Hamilton County, Ohio, died at his home, September 8

Robert G Van Valzah, M D, Springfield, Ore , College of Physicians and Surgeons, Baltimore, 1885, aged 52, also a druggist, died at his home, September 5, from nephritis

Charles A Mattison, Conway Ark (license, Arkansas 1903), aged 53, a colored practitioner of Faulkner County for twenty-five years, died at his home, September 9

Charles R Sheetz, M D, Algona, Iowa, Rush Medical College 1882, aged 65, also a druggist, died at his home September 7, from disease of the prostate gland

William B Jones, Summerville Ark (license, Arkansas, 1903), aged 73, a practitioner of Calhoun County, Ark since 1860, died at his home, September 9

L Love Crump, West Point Miss (license, Mississippi), aged 75, a Confederate veteran, died at his home, September 6, as the result of an accident

Elisha Dyer Leffingwell, M D, Oswego N Y , Bellevue Hospital Medical College, 1877, aged 67, died at his home, September 11

Nathan N E Wood, M D, Chicago, Bennett Medical College, Chicago, 1878, aged 64, died at his home, September 15

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

THE THERAPEUTIC VALUE OF THE GLYCEROPHOSPHATES

Report of the Council on Pharmacy and Chemistry

The Council has adopted the following report and authorized its publication W A PUCKNER, Secretary

Glycerophosphates are the salts of glycerophosphoric acid, $H_2[C_3H_5(OH)_2]PO_4$ This acid is produced by the interaction of glycerin and phosphoric acid In general, only sodium glycerophosphate, $Na_2[C_3H_5(OH)_2]PO_4+5\frac{1}{2}H_2O$, and calcium glycerophosphate $Ca[C_3H_5(OH)_2]PO_4+H_2O$, are used in medicine though the glycerophosphates of lithium, potassium, manganese, magnesium, iron quinin and strychnin are claimed as constituents of proprietary preparations At a time when certain disorders were assumed to be due to a deficiency of phosphorus in the nerve structure in the body, glycerophosphates were introduced as "nerve foods' and "tonics" on the theory that they would be assimilated more readily than hypophosphites or ordinary phosphates What led to this assumption was the fact that the lecithins, which form a part of the nerve structure were known to contain the glycerophosphate radical in the molecule The belief that inorganic phosphates cannot supply the body s need of phosphorus is implied or expressed in most of the 'literature" devoted to proprietary phosphorus preparations

Thus Schering and Glatz quote G Meilhere as saying that 'the organism is incapable of assimilating inorganic forms of phosphorus"

Again when exploiters of glycerophosphates admit that the body can synthesize its phosphorus compounds from inorganic phosphates they attempt to counterbalance the admission by contending that the use of organic compounds "spares' the system the necessity of making such synthesis This assumption rests on the theory that the organic phosphorus compounds are absorbed and stored as such

This theory is contradicted by evidence which has been presented[1] that the organic phosphorus compounds are split up into inorganic phosphates before absorption

The Council requested E K Marshall, Jr, to review the evidence for and against the therapeutic value of organic phosphorus compounds Marshall's study[2] brings out the following points

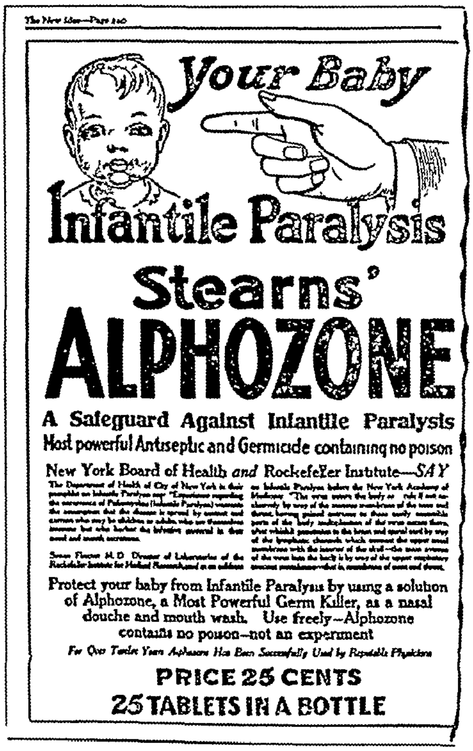
1 In various tissues of the animal body, enzymes have been found which hydrolyze complex organic phosphorus compounds so as to liberate the phosphorus in the form of inorganic phosphates

2 Metabolism studies of the phosphorus balance with diets containing inorganic phosphorus compounds, as compared with diets containing organically bound phosphorus, are somewhat conflicting in their results The balance of evidence, however, is in favor of the view that there is no difference between organically combined phosphorus and inorganic salts with respect to the phosphorus balance

3 Experiments indicate that the organism thrives on and supplies its phosphorus needs quite as well from inorganic phosphorus compounds as from organically bound phosphorus

Marshall concludes

'We see that the evidence is very convincing of the view that the animal organism can synthesize its complex organic phosphorus constituents from inorganic phosphates, and that organic phosphorus is of no more value as a food than inorganic"



Your Baby

Infantile Paralysis

Stearns'

ALPHOZONE

A Safeguard Against Infantile Paralysis

Most powerful Antiseptic and Germicide containing no poison

New York Board of Health *and* Rockefeller Institute—*SAY*

Protect your baby from Infantile Paralysis by using a solution of Alphozone, a Most Powerful Germ Killer, as a nasal douche and mouth wash. Use freely—Alphozone contains no poison—not an experiment

For Over Twelve Years Alphozone Has Been Successfully Used by Reputable Physicians

PRICE 25 CENTS

25 TABLETS IN A BOTTLE

This is a photographic reproduction (greatly reduced) of a full page advertisement from a house organ put out by Frederick Stearns & Company, Detroit, Mich Make your own comment

In view of this report, the Council deemed it advisable to take up the consideration of certain glycerophosphate preparations on the market As the therapeutic claims are all similar, it is not necessary to quote them extensively

TONOLS (SCHERING'S GLYCEROPHOSPHATES)

Tonols (Schering and Glatz, New York) comprise iron, lime, lithium, magnesium, manganese, potassium, quinin sodium and strychnin "Tonols' or glycerophosphates, also Duotonol Tablets said to contain equal parts of calcium and sodium glycerophosphates, Triotonol Tablets, each said to contain "Sodium Tonol 2½ grains, Lime-Tonol 2½ grains Strychnine-Tonol 1/60 grain' Quartonol Tablets said to contain "Sodium and Lime-Tonols each 2¼ grains Quinine Tonol ½ grain Strychnine-Tonol 1/200 grain', Sextonol Tablets, said to contain Sodium and Lime-Tonols each 2 grains, Iron-Tonol ½ grain, Manganese and Quinine-Tonols each ¼ grain, Strychnine-Tonol 1/200 grain

The name Tonols" is objectionable in that it is not only nondescriptive of the composition but also therapeutically (and falsely) suggestive The composition of the more elaborate Tonols is particularly unscientific there is no justification for combining quinin, strychnin iron, manganese etc, in one formula

PHOSPHORCIN COMPOUND

Phosphorcin Compound called The Elementary Phosphorus indicated in all forms of Nervous Diseases and the "Perfect Formula, is said to be manufactured by the Organic Products Company Wetzlar an der Lahn Germany and Greenwich Conn It is sold in the United States by Eimer and Amend, New York, according to whom

Each two fluidrachms contain		
Acidulated Bone Phosphor O P Co	2	grains
Calcium Glycerinophosphate Merck & Co	1⅓	grains
Magnesium Glycerinophosphate Merck & Co	1⅓	grains
Sodium Glycerinophosphate Merck & Co	2⅓	grains
Lactated Pepsin	2	grains
Ignatia Extract	1/60	grain
C P Glycerin (Special Process) O P Co	50%	

"Acidulated bone phosphor presumably is acid phosphate of calcium This formula is an unscientific shotgun combination

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[1] McCollum and Hart Grosser and Husler Plimmer and Bayliss and Plimmer quoted by Marshall (Note 2)

[2] Marshall E K. The Therapeutic Value of Organic Phosphorus Compounds THE JOURNAL A M A Feb 13 1915 p 573

Deaths

Henry Clay Baum, M D, Syracuse, N Y, University of Michigan, Ann Arbor, 1883, aged 57, a Fellow of the American Medical Association, professor of dermatology and syphilology in the College of Medicine of Syracuse University, consulting dermatologist to the Onondaga Orphan Asylum, dermatologist and syphilologist to the Syracuse Hospital for Women and Children, St Vincent's Orphan Asylum, House of Providence and Syracuse Free Dispensary, dermatologist to St Joseph's Hospital, formerly major surgeon of the Second Infantry, N G, N Y, died at his home in August

Richard Mott Moore, M D, Rochester, N Y, University of Buffalo, N Y, 1878, aged 59, a Fellow of the American Medical Association, one of the foremost practitioners of Rochester, a member of the board of health of Rochester in 1893, for several years chairman of the Monroe County Milk Commission and once president of the Rochester Academy of Medicine, who had been ill for five years with a disease of the circulatory system which necessitated several operations, and finally amputation of the leg above the knee, died at his home, September 13, from angina pectoris

William Keller, M D, Princeton, Ill, St Louis College of Physicians and Surgeons, 1884, aged 73, formerly a Fellow of the American Medical Association, a member of the Illinois State Medical Society, a graduate of medicine in the University of Tubingen, Germany, about 1865, surgeon in the Prussian army during war between Germany and Austria, died at his home, September 7, from septic pneumonia, following a carbuncle of the leg

Elijah Miller Reed, M D, Baltimore, University of Maryland, Baltimore 1864, aged 72, formerly a member of the Medical and Chirurgical Faculty of Maryland and professor of nervous diseases and medical jurisprudence in Maryland Medical College, Baltimore, at one time an officer of the Medical Corps of the army, died at his home, September 12, from cerebral hemorrhage

William A Brown, M D, Monticello, Ark., University of Tenn, 1869, aged 73, formerly a Fellow of the American Medical Association, a member and once vice president of the Arkansas Medical Society, president in 1914 of the Arkansas Fourth Councilor District Medical Society, a Confederate veteran, died at his home, September 6, from heart disease

Leo Dinkelspiel, M D, New York, College of Physicians and Surgeons in the City of New York, 1883, formerly a Fellow of the American Medical Association, captain in the medical corps of the Serbian army during the war with Bulgaria in 1884, died at the home of his sister in New Rochelle, N Y, September 11, from cerebral hemorrhage

John Joseph Thompson, M D, Webster, Mass, Jefferson Medical College 1887, aged 56, a Fellow of the American Medical Association, town physician of Webster for fifteen years, chairman of the school committee for ten years and trustee of the public library for twenty years, died at his home, September 16, from cerebral hemorrhage

Edgerton Clapp David, M D, Picton, Ont, University of Michigan, Ann Arbor, 1877, aged 66, for many years a practitioner of Bad Axe, Mich, and Buffalo, who has been an inmate of the Rockwood Asylum, Kingston Ont, on account of mental disease, for eighteen years, died in that institution, April 20, from septic endocarditis

Emma Albertina Walser Townsend, M D, New Brighton, N Y, Women's Medical College of the New York Infirmary for Women and Children, New York, 1888, aged 51 who is said to have been the first woman intern in the New York Hospital, for several years a member of the local board of education, died at her home September 13

Albert James Mackay, M D, Peacham, Vt, University of Vermont, Burlington, 1897, aged 50, a Fellow of the American Medical Association, member of the legislature in 1915-1916, died Brightlook Hospital, St Johnsbury, Vt September 11, two days after an operation for intestinal disease

John H Wilson, M D, Bethlehem, Pa, University of Pennsylvania Philadelphia 1860, aged 80, a Fellow of the American Medical Association, surgeon of volunteers throughout the Civil War, one of the best known practitioners of the Lehigh Valley, died at his home, September 12

Daniel Hennessey, M D, Bangor, Me, Geneva (N Y) Medical College, 1866, aged 79, a Fellow of the American Medical Association, a member of the surgical staff of the Aid-de-Camp Hospital on David's Island N Y, after the Civil War, died at his home, September 10

Charles L Hall, M D, Mount Jackson, Va, Washington University School of Medicine, Baltimore, 1876, aged 65, formerly a practitioner of Lost River, W Va, and a member of the West Virginia House of Delegates from Hardy County, died at his home, September 5

Enoch T Jones, M D, Hampton, Ark, Memphis Hospital Medical College, Memphis, Tenn, 1901, aged 49, formerly a Fellow of the American Medical Association and once president of the Calhoun County (Ark) Medical Society, died at his home, September 9

James W Dreyfus, M D, Louisiana, Mo, Washington University, St Louis, 1877, aged 65, formerly a Fellow of the American Medical Association, a member of the Missouri State Medical Association, died at his home, August 19, from cerebral hemorrhage

Francis S Merriam Meyers, M D, Mt Vernon, N Y, Women's Medical College of the New York Infirmary, New York 1894, aged 46, a member of the Medical Society of the State of New York, died at her home, September 14, from heart disease

George Henry Turner, Jr, M D, Hartland, Me, Medical School of Maine, Brunswick, 1903, aged 38, formerly a member of the Maine Medical Association and a practitioner of Portland, died at his home, September 9, from acute gastritis

Thomas Fitzgibbon, M D, St Francis, Wis, Rush Medical College, 1882, aged 62, a Fellow of the American Medical Association, formerly professor of gynecology in the Milwaukee Medical College, died at his home, September 17

Malcolm Eugene Douglass, M D, Guilford, Md, Hahnemann Medical College, Philadelphia, 1880, aged 69, formerly a practitioner of Dansville, Va, died in his office, September 13, from heart disease

Isaiah W Willits, M D, Bloomsburg Pa, Jefferson Medical College, 1875, aged 73, a member of the Medical Society of the State of Pennsylvania, died at his home, August 24, from heart disease

Seth C Felt, M D, Long Beach, Calif, Detroit College of Medicine, 1876, aged 77, a veteran of the Civil War, until 1903 a practitioner of New Boston, Mich, died at his home, September 5

Charles H Whiting (license Maryland), a practitioner for forty-nine years, a veteran of the Civil War, died in the University Hospital, Baltimore, September 11, from cerebral hemorrhage

George Watson Stevenson, M D, Cleveland, Western Reserve University, Cleveland, 1872, aged 69, a Fellow of the American Medical Association, died at his home, August 30

John O Guhman, M D, St Louis, Missouri Medical College St Louis 1889, aged 46, a Fellow of the American Medical Association, died suddenly at his home, September 11

Walter L Davis, M D, Cincinnati, Miami Medical College Cincinnati, 1866, aged 72, for more than thirty years alienist of Hamilton County, Ohio, died at his home, September 8

Robert G Van Valzah, M D, Springfield, Ore, College of Physicians and Surgeons, Baltimore, 1885, aged 52, also a druggist, died at his home, September 5, from nephritis

Charles A Mattison, Conway, Ark (license, Arkansas 1903), aged 53, a colored practitioner of Faulkner County for twenty-five years, died at his home, September 9

Charles R Sheetz, M D, Algona Iowa, Rush Medical College 1882, aged 65, also a druggist, died at his home, September 7, from disease of the prostate gland

William B Jones, Summerville Ark (license, Arkansas, 1903), aged 73, a practitioner of Calhoun County, Ark, since 1860, died at his home September 9

L Love Crump, West Point, Miss (license Mississippi), aged 75, a Confederate veteran, died at his home, September 6, as the result of an accident

Elisha Dyer Leffingwell, M D, Oswego, N Y, Bellevue Hospital Medical College, 1877, aged 67, died at his home, September 11

Nathan N E Wood, M D, Chicago, Bennett Medical College, Chicago, 1878, aged 64, died at his home, September 15

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

THE THERAPEUTIC VALUE OF THE GLYCEROPHOSPHATES

Report of the Council on Pharmacy and Chemistry

The Council has adopted the following report and authorized its publication W A Puckner, Secretary

Glycerophosphates are the salts of glycerophosphoric acid, $H_2[C_3H_5(OH)_2]PO_4$ This acid is produced by the interaction of glycerin and phosphoric acid In general, only sodium glycerophosphate, $Na_2[C_3H_5(OH)_2]PO_4+5\frac{1}{2}H_2O$ and calcium glycerophosphate $Ca[C_3H_5(OH)_2]PO_4+H_2O$, are used in medicine though the glycerophosphates of lithium, potassium, manganese, magnesium, iron, quinin and strychnin are claimed as constituents of proprietary preparations At a time when certain disorders were assumed to be due to a deficiency of phosphorus in the nerve structure in the body, glycerophosphates were introduced as "nerve foods" and 'tonics" on the theory that they would be assimilated more readily than hypophosphites or ordinary phosphates What led to this assumption was the fact that the lecithins, which form a part of the nerve structure, were known to contain the glycerophosphate radical in the molecule The belief that inorganic phosphates cannot supply the body's need of phosphorus is implied or expressed in most of the 'literature' devoted to proprietary phosphorus preparations

Thus Schering and Glatz quote G Meilliere as saying that the organism is incapable of assimilating inorganic forms of phosphorus'

Again, when exploiters of glycerophosphates admit that the body can synthesize its phosphorus compounds from inorganic phosphates they attempt to counterbalance the admission by contending that the use of organic compounds "spares' the system the necessity of making such synthesis This assumption rests on the theory that the organic phosphorus compounds are absorbed and stored as such

This theory is contradicted by evidence which has been presented[1] that the organic phosphorus compounds are split up into inorganic phosphates before absorption

The Council requested E K Marshall, Jr to review the evidence for and against the therapeutic value of organic phosphorus compounds Marshall's study[2] brings out the following points

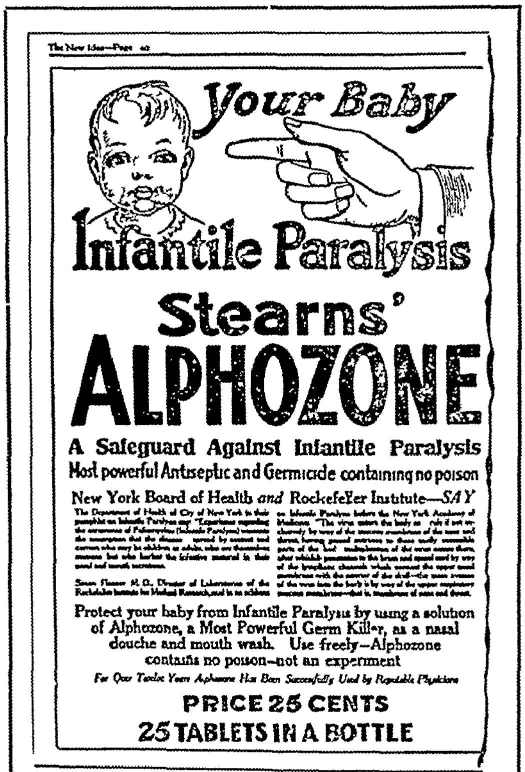
1 In various tissues of the animal body, enzymes have been found which hydrolyze complex organic phosphorus compounds so as to liberate the phosphorus in the form of inorganic phosphates

2 Metabolism studies of the phosphorus balance with diets containing inorganic phosphorus compounds, as compared with diets containing organically bound phosphorus, are somewhat conflicting in their results The balance of evidence, however, is in favor of the view that there is no difference between organically combined phosphorus and inorganic salts with respect to the phosphorus balance

3 Experiments indicate that the organism thrives on and supplies its phosphorus needs quite as well from inorganic phosphorus compounds as from organically bound phosphorus

Marshall concludes

> We see that the evidence is very convincing of the view that the animal organism can synthesize its complex organic phosphorus constituents from inorganic phosphates, and that organic phosphorus is of no more value as a food than inorganic '



The New Idea—Page 42

Your Baby

Infantile Paralysis

Stearns'

ALPHOZONE

A Safeguard Against Infantile Paralysis

Most powerful Antiseptic and Germicide containing no poison

New York Board of Health *and* Rockefeller Institute—*SAY*

Protect your baby from Infantile Paralysis by using a solution of Alphozone, a Most Powerful Germ Killer, as a nasal douche and mouth wash. Use freely—Alphozone contains no poison—not an experiment

For Over Twelve Years Alphozone Has Been Successfully Used by Reputable Physicians

PRICE 25 CENTS

25 TABLETS IN A BOTTLE

This is a photographic reproduction (greatly reduced) of a full page advertisement from a house organ put out by Frederick Stearns & Company, Detroit, Mich Make your own comment

In view of this report, the Council deemed it advisable to take up the consideration of certain glycerophosphate preparations on the market As the therapeutic claims are all similar, it is not necessary to quote them extensively

TONOLS (SCHERING'S GLYCEROPHOSPHATES)

Tonols (Schering and Glatz, New York) comprise iron, lime, lithium magnesium, manganese, potassium, quinin sodium and strychnin "Tonols" or glycerophosphates, also Duotonol Tablets said to contain equal parts of calcium and sodium glycerophosphates, Triotonol Tablets, each said to contain "Sodium Tonol 2½ grains Lime-Tonol 2½ grains, Strychnine-Tonol 1/60 grain', Quartonol Tablets said to contain "Sodium and Lime-Tonols each 2¼ grains Quinine Tonol ½ grain Strychnine-Tonol 1/200 grain', Sextonol Tablets said to contain 'Sodium and Lime-Tonols each 2 grains Iron-Tonol, ½ grain, Manganese and Quinine-Tonols, each ¼ grain Strychnine-Tonol 1/200 grain

The name Tonols" is objectionable in that it is not only nondescriptive of the composition but also therapeutically (and falsely) suggestive The composition of the more elaborate Tonols is particularly unscientific, there is no justification for combining quinin, strychnin, iron manganese etc, in one formula

PHOSPHORCIN COMPOUND

Phosphorcin Compound called 'The Elementary Phosphorus indicated in all forms of Nervous Diseases and the "Perfect Formula, is said to be manufactured by the Organic Products Company Wetzlar an der Lahn, Germany and Greenwich Conn It is sold in the United States by Eimer and Amend, New York, according to whom

Each two fluidrachms contain	
Acidulated Bone Phosphor O P Co	2 grains
Calcium Glycerinophosphate Merck & Co	1½ grains
Magnesium Glycerinophosphate Merck & Co	1½ grains
Sodium Glycerinophosphate Merck & Co	2½ grains
Lactated Pepsin	2 grains
Ignatia Extract	1/10 grain
C P Glycerin (Special Process) O P Co	50%

'Acidulated bone phosphor presumably is acid phosphate of calcium This formula is an unscientific shotgun combination

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[1] McCollum and Hart Grosser and Husler Plimmer and Bayliss and Plimmer quoted by Marshall (Note 2)

[2] Marshall E K The Therapeutic Value of Organic Phosphorus Compounds The Journal A M A Feb 13 1915 p 573

ROBINOL

Robinol, manufactured by John Wyeth and Brother, Philadelphia, is called a "Universal Tonic" It is said to be

> 'A preparation of the glycerophosphates of lithium calcium sodium, iron, manganese, quinine, with 1 16 gr strychnine glycerophosphate in each fluidounce'

This is a semisecret preparation, since the quantities of most of the ingredients are not given and the vehicle is not named This complex combination, too, is unwarranted

PHOSPHOGLYCERATE OF LIME (CHAPOTEAUT)

This is said to be prepared by the Laboratoires de Pharmacologie Generale, Dr Ph Chapelle, Paris and New York It is sold in this country by E Fougera and Co, Inc, New York It is offered in several forms, especially in that of wine, which is called the "Medicinal Wine and Tonic Par Excellence" The alcohol is no doubt the constituent to which this preparation is indebted for such popularity as it has attained, for it is much more freely advertised than the syrup, capsules or granulated form The usual claims are made with regard to the efficacy of calcium glycerophosphate "during convalescence, in cases of enfeebled vitality, and nervous affections associated with an excessive elimination of phosphates"

ELIXIR GLYCEROPHOSPHATES, NUX VOMICA AND DAMIANA

This is manufactured by Sharp and Dohme, Baltimore The manufacturers' statement of composition is

> 'Each fluidounce represents Nux Vomica 8 grains Damiana 64 grains combined with Glycerophosphates of Calcium and Sodium"
> Alcohol 20 per cent

Sharp and Dohme call this mixture a "Reconstructive, Nerve Stimulant, Aphrodisiac," and claim that

> Phosphorus in elemental form has long been prescribed under the title of Elixir Phosphorus Nux Vomica and Damiana but due to the rapidity of chemical change occurring in preparations containing this form of Phosphorus much of the Physiologic action is lost The Glycerophosphates present Phosphorus in its most available form—the form in which it exists in the brain and nervous system They powerfully stimulate the functions of nutrition and are rapidly assimilated by the system
>
> Nux Vomica is a general Nerve Tonic Damiana exerts a stimulant effect upon the sexual appetite and function '

The claim that the glycerophosphates may be substituted for elementary phosphorus is, at least, novel

The elixir is an unscientific semisecret combination

RECOMMENDATIONS

All of the preparations mentioned violate Rule 6 (unwarranted therapeutic claims) In addition, Robinol and Elixir Glycerophosphates, Nux Vomica and Damiana violate Rule 1 (secrecy of composition) in that not all the quantities of the ingredients are declared, Tonols, Phosphorcin Compound and Robinol violate Rule 8 (objectionable names) It is recommended that the Council endorse Marshall's findings and declare that Tonols (Schering and Glatz), Phosphorcin Compound (Eimer and Amend), Robinol (John Wyeth and Brother), Phosphoglycerate of Lime Chapoteaut (E Fougera and Co), and Elixir Glycerophosphates, Nux Vomica and Damiana (Sharp and Dohme) are ineligible for New and Nonofficial Remedies

KORA-KONIA

Report of the Council on Pharmacy and Chemistry

Kora-Konia is a "dusting powder" which at present is advertised to the medical profession through medical journals, circulars, post cards and sample packages It is put out by the "House of Mennen," which sells various toilet preparations such as talcum powder, shaving soap, etc On the trade package is the statement

> Indicated in the treatment of Acne Dermatitis Eczema Intertrigo in obstinate cases of chafing prickly heat, nettle rash chicken pox measles scarlatina and irritations of the skin as a soothing absorbent and antiseptic dusting powder and as an umbilical dressing'

While a circular asserts that

> Kora Konia is indicated in the treatment of acne, dermatitis eczema and eczematous conditions of the utmost severity, eruptive fevers

What purports to be a physician's testimonial reads

> I used Kora Konia in a new born case of inherited syphilis and the eruption soon cleared up"

Germicidal powers are claimed for Kora-Konia in a medical journal advertisement In view of the various claims made and the fact that it is advertised to the medical profession, the Chemical Laboratory of the American Medical Association was asked to analyze Kora-Konia This was done and the chemists reported as follows

LABORATORY REPORT

Kora-Konia is a white powder, slightly greasy to the touch Qualitative tests showed the presence of boric acid, zinc, magnesium, a solid fatty acid and material insoluble in hydrochloric acid containing magnesium and aluminum Starch was not found Quantitative determinations gave the following results

Acid insoluble material (talc)	48 3 per cent
Magnesium (Mg^{++}) soluble in dilute acid	1 2 per cent
Zinc (Zn^{++})	4 5 per cent
Stearic acid (impure)	39 2 per cent
Boric acid	3 0 per cent
Carbon dioxide (CO_2)	1 5 per cent

From this analysis it is concluded that Kora-Konia has essentially the following composition

Zinc stearate U S P	44 per cent
Talc	48 per cent
Magnesium carbonate U S P	5 0 per cent
Boric acid	3 0 per cent

Essentially this dusting powder consists of the well-known substances talc and zinc stearate in about equal proportions to which small quantities of magnesium carbonate and boric acid have been added Inasmuch as the claim is made, by inference at least, that Kora-Konia represents original investigation carried out "with the cooperation of the medical profession" it should be stated that the preparation of commercial zinc stearate was described and recommended as a dusting and toilet powder nearly twenty-five years ago[1]

There is nothing new or original in any one of these substances or in the combination The extravagant and unwarranted claims made for this simple dusting powder are undoubtedly leading the public, as well as some thoughtless physicians, to place undeserved confidence in it In view of the small amount of boric acid present in the powder, its antiseptic powers must be slight and its germicidal powers almost nil The Council declared Kora-Konia ineligible for New and Nonofficial Remedies and authorized publication of this report

Correspondence

Curtailment of Official Reports by Great Britain

To the Editor —I am sure that your readers will share the conviction that a serious error is being made in the British policy of retrenchment in public expenditures according to which "on account of the war and the desirability of curtailing expenses on public administration as far as prudently can be done, the local government board has recommended that no reports be printed this year by medical officers of health and sanitary inspectors" This extract is from a letter from one of the foremost health officers in England, and indicates a direction of public policy which may tend seriously to impair the admirable efficiency of the public health service of the United Kingdom

Of interest in this connection is the following brief extract from the annual report of the acting medical officer of health of the Borough of Royal Leamington Spa "The local government board has suggested that the annual report for 1915 should deal only with the events of the year and also that it need not be printed Acting on the latter suggestion your committee has decided that such copies of the report as are required by law should be typewritten, and that it should not be printed for general distribution as in former years'

Unquestionably the curtailment of official reports is a matter of considerable practical importance and perhaps imperative in view of the heavy and increasing military expenditures, but no existing conditions can justify the complete cessation of the issuance of official reports, particularly on public health activities, where the facts of recent experience, unless promptly brought to public attention, are merely of historical value

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[1] Proceedings A Ph A 1892 Vol 40 p 488

As another recent illustration of this regrettable direction of English public policy, reference may be made to the material reduction in the contents of the annual report of the Metropolitan Asylum Board, which constitutes by far one of the most useful sources of information on the results of the institutional treatment of contagious and infectious diseases

Frederick L Hoffman, Newark, N J
Statistician, Prudential Insurance Company of America

Glyco-Thymoline and Poliomyelitis

To the Editor —Referring to your article on "Glyco-Thymoline and Poliomyelitis' (Propaganda, The Journal, Sept. 16 1916, p 895) This summer I have treated perhaps fifty people for infected middle-ear, and for nasal sinusitis, caused by douching the nose with so-called antiseptics, to ward off poliomyelitis Some years ago I treated a girl who was employed in the office of the Glyco-Thymoline people, Kress and Owen for mastoiditis presumably caused by the too liberal use of the nasal wash which she obtained for nothing I am constantly writing and preaching against the use of nasal washes, but unfortunately most physicians are swayed by the persistency with which the various nasal wash people offer their wares The nasal douche is decidedly more harmful than useful

Albert Bardes, M D, New York
Otologist, Flushing Hospital

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed Every letter must contain the writer s name and address but these will be omitted on request

THE OCULOCARDIAC REFLEX

To the Editor —Please answer the following questions
1 Who first described the oculocardiac reflex?
2 *Will you give a brief description of the reflex?*
3 Will you give some references to the literature on the subject?

Clarence W Lieb M D, Watkins Glen N Y

Answer —1 This was first described by Aschner in 1908, and is therefore sometimes spoken of as the Aschner reflex

2 The oculocardiac reflex is a change in the heart's rate of rhythm following pressure on one or both eyeballs The path of the reflex is generally considered to be along the *fifth cranial nerve, the medulla and the vagus or more rarely* the sympathetic nerves Usually slowing of the pulse rate results This is probably due to inhibitory stimulation along the vagus nerve, and individuals showing this slowing are spoken of as vagotonics Rarely there is an increase in the pulse rate It is believed that in these cases the impulse passes along the sympathetic Such persons are described as sympathicotonics It is generally considered that in normal persons the cardiac rate is slowed from four to ten beats a minute The diagnostic value of this reflex is not as yet definitely determined There is some evidence to show that this sign may enable one to differentiate between disease of the heart muscle and disease of the cardiac nervous mechanism

3 *The following are some references*

Aschner *Wien klin Wchnschr* 1908 xxi 1529
Gunson E B The Oculo Cardiac Reflex *Brit Jour Children s Dis* April 1915 abstr The Journal May 15 1915 p 1685
Aviragnet Dorlencourt and Bouttier *Compt rend Soc de biol* 1914 lxxvi p 771
Guill in and Dubois *Bull et mem Soc méd d hop de Paris* 1914 xxxvii 584
Lesieur Vernet and Petzetakis *Bull et mém Soc méd d hop de Paris* 1914 xxxvii 440 446 593 599
Lesieur Vernet and Petzetakis *Bull et mem Soc med d hop de Paris* 1914 xxxvii 515
Monier Vinard and Meaux Saint Marc *Bull et mém Soc méd d hop de Paris* 1914 xxxvii 614
Petzetakis *Bull et mem Soc méd d hop de Paris* 1914 xxxvii 562
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Levine S A Oculocardiac Reflex Arch Int Med 1915 xv 758 abstr The Journal June 12 1915 p 2017
Lian C Therapeutic Utilization of the Eyeball Heart Reflex *Arch d mal du coeur* July 1915 abst The Journal Aug 21 1915 p 745
Ferralis G B and Pezzi C When the Oculo Cardiac Reflex Induces Extrasystoles *Policlinico* Rome May 1916 abstr The Journal June 24 1916, p 2129

LIQUOR ALUMINI ACETATIS (BUROW S SOLUTION)

To the Editor —The Journal (*Sept 9 1916* p *829*) contains your answer to the question of Dr Patterson on the composition of Burow s solution It occurred to me that it might have been well to emphasize the recommendation that *Burow s solution* be *not* made with lead acetate as was formerly customary The presence of lead is not required as the virtue in the preparation is in the acetic acid which is constantly liberated in the wet dressing as the strong odor of this substance after long application indicates Lead therefore has been omitted in later editions of the National Formulary The danger of lead in Burow s solution namely absorption of lead was pointed out in a case report by Gottheil (The Journal, March 26 1910 p 1056) The use of acetic acid as a wet dressing must be of ancient origin as its use is immortalized in the nursery rhyme of Jack and Jill After Jack fell down and broke his crown you will remember he was put to bed with a head dressing of vinegar and brown paper '

Joseph S Lewis M D Buffalo

Answer —Burow's solution is official in the latest (fourth edition) of the National Formulary under the title "Liquor Alumini Acetatis ' It is prepared by treating 150 gm of lead acetate with 85 gm of aluminum sulphate made up to 1 000 c c If the solution is properly made according to the directions given it should contain very little lead if any at all the lead sulphate formed is practically insoluble and a calculated excess of aluminum sulphate is employed in order to insure the conversion of all of the lead to lead sulphate As the solution is now official there should be but slight danger from lead poisoning following its use The virtue of the aluminum acetate treatment does not reside wholly in the liberated acetic acid If this were true acetic acid alone would be as efficacious as the liquor alumini acetatis which is not, however the case

DIGITALIN

To the Editor —About six years ago an article in The Journal compared pure digitalin given hypodermically with the physiologic effect of the tincture As I recollect the article stated that 1/5 grain digitalin was equivalent to about 10 minims of the tincture Will you tell me what is considered the proper adult dose of the preparation known as Digitalin Pure German? The physicians in this part of the country consider 1/50 grain a large dose and I have been criticized for using 1/10 grain a dose which I have used for five years always with satisfactory results

E C Day M D, Laguna Beach Calif

Answer —Digitalin German is described in New and Nonofficial Remedies 1916 page 99 It says 'What has been said of the uncertainty of dosage of true digitalin must obviously apply with even greater force to German digitalin since the activity of the latter probably depends mainly on the contained true digitalin The dose of 'German' digitalin was formerly given as 0 001 to 0 002 gm (1/60 to 1/30 grain) maximum dose 0 004 gm (1/16 grain) with a maximum per day of 0 02 gm (1/3 grain) Many clinicians however, have used very much larger doses without ill effects, and the relative activity of certain specimens of the German digitalin and other members of the group would seem to indicate that such specimens of German digitalin might be given safely in daily doses of a grain or possibly more'

Inspiration of the Teacher —Immortality is a theme on which human thought has exhausted itself without absolute and universal conviction because it takes the human *mind* beyond its depth at the first long stride forward But there is one phase of immortality about which we can all be assured The mind of today can through the minds of tomorrow project itself into immortality Ideas and ideals travel through generations of minds to eternity It will ever be the inspiration of the teacher that to him in particular comes this great opportunity to be a part of the future by molding and guiding and training the minds of the present —R L Wilbur

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arizona Phoenix Oct 3 4 Sec Dr John Wix Thomas 306 Goodrich Bldg, Phoenix

California Los Angeles, Oct 3 Sec, Dr Charles B Pinkham, Room 527 Forum Bldg, Sacramento

Colorado Denver, Oct 3 Sec, Dr David A Strickler, 612 Empire Bldg Denver

District of Columbia Oct 10 12 Sec Dr Edgar P Copeland, The Rockingham Washington

Florida Homeopathic, Jacksonville, Nov 10 Sec, Dr J B Griffin, St Augustine

Georgia Atlanta, Oct 10 12 Sec, Dr C T Nolan Marietta

Idaho Wallace Oct 3 Sec, Dr Charles A Dettman, Burke

Illinois *Chicago Oct 10 12* Sec Dr C St *Clair Drake* Springfield

Iowa Des Moines, Oct 17 19 Sec, Dr Guilford H Sumner State House, Des Moines

Kansas Topeka Oct 10 12 Sec, Dr H A Dykes Lebanon

Michigan Lansing, Oct 10 12 Sec, Dr B D Harison, 504 Washington Arcade, Detroit

Minnesota Minneapolis, Oct 3 6 Sec, Dr Thomas S McDavitt, 814 Lowry Bldg St Paul

Mississippi Jackson Oct 24 25 Sec Dr J D Gilleylen Jackson

Montana Helena, Oct 3 Sec, Dr William C Riddell Helena

Nevada *Carson City Nov 6* Sec *Dr S L Lee, Carson City*

New Jersey Trenton Oct 17 18 Sec Dr Alexander MacAlister, 438 E State St Trenton

New Mexico Santa Fe, Oct 9 Sec, Dr W E Kaser, East Las Vegas

Oklahoma Oklahoma City, Oct 10 11 Sec Dr Ralph V Smith, 502 Daniel Bldg Tulsa

Porto Rico San Juan Oct 3 Sec, Dr Quevedo Baez San Juan

Rhode Island Providence Oct 5 6 Sec Dr Gardner T Swarts, 313, State House Providence

Wyoming Laramie, Oct 3 5 Sec Dr H E McCollum Laramie

Minnesota April Report

Dr Thomas S McDavitt, secretary of the Minnesota State Board of Medical Examiners, reports the oral, practical and written examination held at Minneapolis, April 4-6, 1916 The total number of subjects examined in was 16, total number of questions asked, 80, percentage required to pass, 75 The total number of candidates examined was 3, all of whom passed Sixteen candidates were licensed through reciprocity The following colleges were represented

College	PASSED	Year Grad	Per Cent
Rush Medical College	(1915) 88 7	(1916)	87
Woman s Medical College of Pennsylvania		(1909)	92

College	LICENSED THROUGH RECIPROCITY	Year Grad	Reciprocity with
Columbian University		(1903)	Dist Colum
Chicago College of Medicine and Surgery		(1914)	Iowa
Hahnemann Medical College and Hospital Chicago		(1910)	Illinois
Illinois Medical College		(1902)	Texas
Northwestern University		(1911)	Illinois
Rush Medical College		(1902)	Illinois
University of Illinois		(1914)	Illinois
State University of Iowa, College of Medicine		(1908)	Iowa
University of Michigan Medical School		(1904)	Iowa
St Louis College of Physicians and Surgeons		(1902)	Wisconsin
John A Creighton Medical College		(1915)	Nebraska
University of Nebraska		(1911)	Nebraska
Medico Chirurgical College of Philadelphia		(1898)	New Jersey
University of Virginia		(1906)	Virginia
Queen s University		(1898)	N Dakota
Western University		(1905)	New Jersey

Mississippi June Report

Dr J D Gilleylen, secretary of the Mississippi State Board of Health, reports the written examination held at Jackson, June 20-21, 1916 The total number of subjects examined in was 8, total number of questions asked, 64, percentage required to pass, 75 The total number of candidates examined was 55, of whom 30 passed, including 1 osteopath, and 25 failed Three candidates were licensed through reciprocity The following colleges were represented

College	PASSED	Year Grad	Per Cent
Atlanta Medical College		(1916)	77 5
Loyola University		(1916)	76
University of Illinois		(1916)	80
University of Louisville		(1916)	83
Tulane University of Louisiana		(1916)	76 78 7
Jefferson Medical College		(1916)	77 5
University of Nashville		(1906)	80
University of Tennessee		(1916)	75 75 75 75 75 5 76, 77, 78, 78 79 80 5 81, 82, 85 88 6
Vanderbilt University		(1916)	79 82 6, 84 5 85 5
University of Virginia		(1916)	81 83
	FAILED		
Birmingham Medical College		(1915)	54 70
University of Alabama		(1907)	69
College of Physicians and Surgeons Little Rock		(1910)	29
Howard University		(1914)	51
Atlanta Medical College		(1916)	63 70
University of Louisville		(1916)	70
Tulane University of Louisiana	(1915) 68 5	(1916)	63, 69
Mississippi Medical College		(1911)	36
Lincoln Memorial University		(1916)	71
Meharry Med Coll	(1912) 35 (1913) 55, (1915) 71	(1916)	64 68
University of Tennessee		(1916)	44 62 8 64, 64 5 65, 68, 70

College	LICENSED THROUGH RECIPROCITY	Year Grad	Reciprocity with
Bennett Medical College		(1911)	Kansas
Chicago Medical College		(1882)	Wisconsin
National University of Arts and Sciences		(1914)	Missouri

Rhode Island July Report

Dr Gardner T Swarts, secretary of the Rhode Island State Board of Health, reports the practical and written examination held at Providence, July 6-7, 1916 The total number of subjects examined in was 7, total number of questions asked, 70, percentage required to pass, 80 The total number of candidates examined was 13, of whom 10 passed and 3 failed The following colleges were represented

College	PASSED	Year Grad	Per Cent
Yale University		(1914)	86 3
Harvard University		(1916)	87 7 94 7
Tufts College Medical School	(1915) 83 2 84 5 86 / 87 2	(1916)	83 8
Jefferson Medical College		(1916)	81 1
University of Vermont		(1906)	84
	FAILED		
College of Physicians and Surgeons Baltimore		(1910)	74 2
Tufts College Medical School		(1915)	64 2 68 7

Book Notices

Nursing Problems and Obligations By Sara E Parsons R N Superintendent of the Training School for Nurses Massachusetts General Hospital, Boston Cloth Price, $1 net Pp 147 Boston Whitcomb & Barrows, 1916

In an interesting introduction, Dr Richard C Cabot states that he is in complete agreement with the principles set forth by Miss Parsons in this book He agrees also with her opinions as to the standards of training schools for nurses. He says "No one any longer supposes that a medical school can be both reputable and self-supporting To maintain proper standards, it must be, and always is, endowed" He believes the same principles apply to nurses' training schools The book represents a series of talks given to nurses in the Massachusetts General Hospital Special sections are devoted to ethics, qualifications for executive work, specialized nursing, graduate nursing and miscellaneous topics The book is in simple language, and is replete with anecdote and the record of personal experience Many nurses' training schools would profit if the principles outlined in this text were incorporated into a course of ethics required of every student

The Expectant Mother and Her Child Containing the Essential Things That Every Mother and Woman Should Know By Margaret J Modeland R N *Introduction by Harold A Miller M D Obstetrician* at the Allegheny General Hospital Leather Price, $1 Pp 113, with illustrations Philadelphia John C Winston Company, 1916

The author presents, in an artistically prepared little book, the usual series of warnings and suggestions to expectant mothers The book in general follows the lines usually found in books on the same subject Some of the suggestions offered are, to put it mildly, not in accord with modern obstetrics and pediatrics for example, that each baby receive an oil rub daily during the first six months of life, that the baby's back be rubbed to make it feel good, that quinin and castor oil be not taken, as they will produce abortion So many books on this subject are now available that the market appears to be rather oversupplied Perhaps it is now time to begin to eliminate books that are unfit, and to encourage those that merit approval

Miscellany

AN ANATOMIC PRAYER

A Hymn Based on an Ancient Fragment of Osteology

C D SPIVAK, M D
Denver

The following piyyut[1] is recited in Hebrew by all orthodox Jews at the Musaf[2] prayer on the second day of Rosh Hashanah, the Jewish religious New Year[3] The following is a free translation into English

THE ANATOMIC PRAYER

"O deign to hear the voice of those who glorify thee with all their members according to the number of the two hundred and forty-eight affirmative precepts In this month, they blow thirty sounds (on the *Shofar* ramshorn) according to the thirty members of the soles of their feet, the additional offerings of the day are ten, according to the ten in their ankles, they approach the altar twice, according to their two legs, five men are called to read the law, according to the five joints in their knees, they observe the appointed time to sound the cornet, on the first day of the month according to the one member in their thigh, they sound the horn thrice according to the three in their hips, lo, with the additional offering of the New Moon, they are eleven, according to their eleven ribs, they pour out the supplication with nine blessings, according to the members in their arms, and which contain thirty verses, according to the thirty in the palms of their hands, they daily repeat the prayer of eighteen blessings, according to the eighteen vertebrae in their spine, at the offering of the continual sacrifice, they sound nine times, according to the nine members in their head, in the two orisons they kneel eight times, according to the eight vertebrae of their neck, he hath ordained the six orders of the Mishnah, according to the six members in the breastbone, their statutes and laws are contained in five books, according to the five perforations, the reins, inward parts, soul, breath, spirit, skin, flesh, sinews and their bones,

'These shall all lift up the eye, and pierce the ear, and open the mouth, that with the tongue and speech of their lips, and from the sole of their foot to their head may show the particulars of their good acts, so that when the sound of the *Shofar* ascends their adversaries may be ashamed, that they may be justified on the day of judgment, and hear the second time from their God"

COMMENT

That one who is not familiar with Jewish traditions may be enabled to understand the rationale of such a prayer, and the causes which induced the author to blend anatomy, the 'ungodly science," with a hallelujah, it is necessary to become familiar with the following historical facts which will serve as a background It is to be borne in mind that all the laws and precepts laid down by Moses in the Pentateuch for the guidance of the Jews are called commandments, *Mitzvoth*[4] The number of such commandments[5] is 613 The commandments are divided into prohibitive commandments, *Mitzvoth lo taaseh*, whose number is 365, and the mandatory commandments *Mitzvoth aseh* whose number is 248 Rabbi Simlai, a Palestinian haggadist[6] says "Six hundred and thirteen commandments were revealed to Moses 365 being prohibitive (negative), equal in number to the days of the year, and 248 being mandatory (affirmative), corresponding in number to the bones of the human body[7] The enumeration and the division into prohibitive and mandatory commandments was undertaken by many Biblical and Talmudic scholars, and gave rise to endless disputes as to which of the passages in the Bible are to be recorded as commandments and whether they belong to the prohibitive or to the mandatory group[8] While the expounders and commentators were busily engaged in settling this controversy, each compiling a list of the commandments which differed from all the others, the stylists, grammarians and poets bestirred themselves and composed hymns whose central theme was the enumeration of the 613 commandments, all of which are known under the term *Azharoth*[9] There is no doubt of their antiquity, as they are mentioned by the well known Gaon Saadia[10] and by the Bible commentator and grammarian Abraham ibn Ezrah,[11] who was conversant with the medical writings of his day, and who speaks in disparaging terms of their blunders in their enumeration, using a medical simile, "that the authors of *Azharoth* in general resemble a man who counts the various medicinal herbs mentioned in medical works without knowing anything of their virtues"[12] But none could accuse the author of the foregoing anatomic piyyut, Rabbi Eleazar Kalir[13] of ignorance He was one of the greatest hymn writers the Jews ever had, and the structure of his hymns remained a model which was followed for centuries after him and indeed constituted what is known as the Kaliric school

"ALL MY BONES SHALL SAY 'LORD WHO IS LIKE UNTO THEE?'

Now, the Jewish religion perhaps more than all others, abhors lip prayer The most sacred prayer of the Jews a prayer which is recited three times a day and is on the lips of every dying Jew, is the Shema[14] which includes the following verses 'And thou shalt love the Lord thy God with all thine heart, with all thy soul and with all thy might" Prayer is considered an expression of love for the Deity Hence, according to the Talmudist[15] prayers must be recited in the manner of David the psalmist 'All my bones shall say Lord, who is like unto thee?"[16] "David said, I praise thee with all the members of my body by performing with them your commandments On my *head* I wear phylacteries at prayer[17] I do not round the *corners of my head*[18] On my *neck* I wear the fringes at which I look with my *eyes*[19] My *mouth* speaketh the praise of the Lord[20] My *lips* shall utter praise[21] I do not round the corners of my *beard* With my *tongue* I speak thy righteousness[23] Thy words have I hid in my *heart*[24] With my *right hand* I copy the law and on my *left hand* I bind the phylacteries[17] I bless the Lord my strength who teacheth my *hands* to war[25] My *feet* stand in an even place[26] My *membrum virile* is circumcised[27] With my *nails* I perform *Periah*[28] my *reins* also instruct me in the law[29] Thy law is within my *entrails*[30] All that is within me blesses the Lord,[31] and, finally, all my bones shall say Lord who is like unto thee?''[16]

The Talmudists with their heightened imagination, allowed themselves the poetic license of giving the words 'my bones" the interpretation of a figure of speech and therefore quoted many passages from psalms wherein parts of the body praise the Lord But no bones are mentioned in the Psalms In David's day the majority of the bones of the human body were an unknown quantity There are mentioned in the

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[1] Piyyut (plural Piyyutim) hymn added to the older liturgy of the Jews that developed during the Talmudic era and up to the seventh century The piyyutim are recited on the holy days The word piyyut is derived from the Greek term for poetry

[2] Musaf additional prayer recited on holy days after the regular daily morning prayer Shacharith

[3] The first day of the Jewish month of Tishre It falls late in September or early in October

[4] The ten commandments are called by the Jews the ten words the same as in Greek—decalog

[5] The Jews call the 613 commandments collectively by the word Taryag mitzvoth coined from the numerical value of the letters T = 400 R = 200 Y = 10 G = 3

[6] Haggadah the nonlegal part of the old rabbinic literature contains homilies narratives, stories legends and references to or short essays on medicine astrology, magic theosophy mathematics etc.

[7] Makkoth 23b

[8] The most distinguished compilers of the 316 commandments were Kahira (ninth century) Saadiah (892 942) Gobirol (1021 1058) Maimonides (1125 1204) and Jacob of Coucy (*thirteenth century*) See Schechter S Studies in Judaism 1896 p 248

[9] Azharoth the name of a hymn of great antiquity which begins with the word Azharoth the theme of which is the enumeration of the 613 commandments in rhymes This hymn gave rise to hundreds of others which are known under the general name Azharoth

[10] Gaon Saadia the founder of scientific Judaism lived from 892 to 942

[11] Abraham ibn Ezrah lived from 1092 to 1167

[12] Yesod Moreh Gate 2 end

[13] Rabbi Eleazar Kalir flourished during the eighth century Zunz Literaturgeschichte der Synagogale Poesie Berlin 1865 Landshuth Amude ha Abodah Berlin 1875 p 32

[14] Hear O Israel the Lord our God is one God Deut 2 5

[15] Yalkut Shimoni 733 16 P 35 10 17 Ex 13 15 78 Lev 19 27 19 Num 15 38 20 Ps 165 11 21 Ps 119 171 22 Lev 19 27 23 Ps 35 28 24 Ps 119 11 25 Ps 144 11 26 Ps 26 11 27 Ex 12 48

[28] In the operation of circumcision the operator the mohel after the excision has been completed seizes the inner lining of the prepuce with thumb nail and index finger of each hand and tears it so that he can roll it fully back over the glans and expose the latter completely

29 Ps 17 7 30 Ps 40 9 31 Ps 103 1

Bible the names of a few bones, but it is uncertain whether they refer to the bone itself or to the outer form of the body which includes the bone The word arm, forearm, shoulder, knee, elbow, hip, etc, may mean the bone or the part of the body including the bone and the soft parts

THE ANCIENT FRAGMENT OF OSTEOLOGY

Rabbi Kalir, in composing an *Azhara,* a hymn on the 613 commandments, treated the subject from a poetic as well as from a scientific point of view His poetry he derived from the sweet singer David "All my bones shall say 'Lord, who is like unto thee?'"[31] His science he derived from the *Mishnah,*[32] in which is preserved an osteologic fragment which reads as follows

Man has 248 bones divided as follows

In the foot *pissath ha regel*	30
In the ankle *kursal*	10
In the shin bone, *shok*	2
In knee joint *arkubba*	5
In the thigh *jarek*	1
In the hip bone *kotlilh*	3
Ribs *tzlaoth*	11
In the hand *pissath ha jad*	30
In the forearm *kaneh*	2
In the elbow joint *marpek*	2
In the arm *zeroa*	1
In the shoulder *kathef*	4
Number of bones on each side	101
Or on both sides	202
Vertebrae, *chuljoth*	18
In the head *rosh*	9
In the neck *tza'or*	8
In the breast bone *mafteach ha leb*	6
Around the openings (anus) *nekabbim*	6
Total	248[33]

There are a number of difficulties which we encounter We are uncertain as to whether our translation of the osteologic fragment into modern nomenclature really corresponds to the nomenclature of those days But no matter what the meaning of each word is, it is evident that the number of bones does not correspond with the modern findings It would be a miracle if it were otherwise When we examine the osteologic fragments in the works of Hippocrates[34] we find that the cranium is composed of only one bone, that there are only seven ribs and that the hand has *many* joints From another fragment of Hippocrates[3] we learn that the hand has 27 bones the foot 24, the neck 7, the hip 5, the back 20, the head, together with the eyebones, 8 The number of all the bones is 91, and with the nails 111 We see that Hippocrates recognized only half the number of the bones Galen speaks guardedly of the number of bones and commits himself to an indefinite statement 'There are more than 200 bones in the human skeleton"[36]

THE INCENTIVE FOR THE STUDY OF ANATOMY BY THE HEBREWS

The discrepancy in the enumeration of the bones by the Talmudists may perhaps be explained by the method they used *in the study of anatomy They did not study anatomy as the* foundation of the medical sciences[37] All their scientific studies had as an incentive some religious precept or rite The following is the origin of the anatomic studies of the ancient Hebrews

According to the Mosaic law,[38] any one who comes in contact with a dead body or any part thereof or remains in a tent wherein a corpse is found is considered *tame,* infected, unclean, for seven days The *Mishnah* teaches that this tent-infection, *Tumath-ohel,* takes place in the presence either of a complete corpse, or of an anatomic unit, an *eber,* member that is, a bone covered with its soft parts A bone stripped of its soft parts does not infect Should, however, a collection of such bones by either their bulk or number constitute more than half of the skeleton, *sheled,* their infecting power is equal to that of a complete corpse This law made it imperative that the number of bones of the human body be ascertained The idea that there exists a complete analogy between the bodies of animals and men was generally discouraged by the Talmudists,[39] although in some cases the analogy was relied on[40]

Direct observations, therefore, on the human body were resorted to, as, for instance, on the bodies of those killed on the battle field, on the wounded, the maimed, the drowned and on the bodies of those condemned to die The Talmud relates the story, in the name of Mar Samuel,[41] that the disciples of Rabbi Ishmael[42] obtained the body of a harlot who had been executed, and having subjected it to prolonged boiling, *Shelikah,* and then counted the bones and found their number to be 252[43] Neither of the numbers given agree with modern anatomic knowledge It is probable that the author of the *Mishnah,* which gives the number of bones as 248, derived his knowledge from an investigation performed in a similar manner The explanation of the discrepancy is probably to be found in the youthful age of the subject used, many of the bones not having been completely ossified The prolonged boiling, on the other hand, caused the bones to be separated into their original component parts, so that the disciples of Rabbi Ishmael counted the epiphysis and diaphysis[44] as separate bones

I venture to assert that there is not to be found in the liturgy of any religion, Christian or pagan, a prayer or hymn which, like this anatomic piyyut of Rabbi Kalir, represents undoubtedly a page of osteology from a chapter of anatomy which was taught 2,000 years ago, and in which the *leitmotif* is that "All my bones shall say, 'Lord, who is like unto thee?'"

Quacks of Today and Yesterday

As The Journal has repeatedly stated, the medical quack and the "patent medicine" vendor are ever ready to reap the profits of public fear in time of epidemic disease The methods of the quack during an epidemic are described by Graham Everitt, in his book, Doctors and Doctors, London, 1888 He says

"Of the quacks of the plague-year 1665, Defoe gives us a very vivid description, derived undoubtedly from the recollections of his father, and of those of his friends who remembered the visitation He tells us how the posts of houses and the corners of streets were plastered with their bills announcing, "Infallible Preventive Pills against the plague; never-failing preservatives against the Infection, Sovereign Cordials against the corruption of the Air , Anti-pestilential Pills , the Royal antidote against all kinds of infection," and so on Then he gives us the announcements of the illustrious professors themselves, "the eminent High Dutch Physician," from Holland, the "Italian Gentlewoman," who gave 'her advice only to the female sex", and the "Experienced Physician," who had devoted himself to the study of what he is pleased to term "the doctrine of antidotes" All these ignorant and impudent swindlers professed to have had special experience in cases of plague infection in foreign countries One fellow "would pawn his life" (worthless as it was), that if the public took his "preparation," "they should never have the plague, no, though they lived in the house with people that were infected" Every one of these rascals soon disappeared, some supposed "they were all swept away in the infection to a man", but Defoe imagines, with far geater probability, that "they fled into the country, and tried their practices upon the people there" who lived in daily apprehension of the infection

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[32] Six treatises dating from the first century B C which are used as a text for all Talmudic discussions and commentaries
[33] Ohloloth 1 8
[34] Hippocrates De Locis in Homine
[35] Hippocrates De Ossium Natura
[36] Galen Deusu partium Liber iii
[37] See C D Spivak in Jewish Encyclopedia article Medicine in the Bible and Talmud viii 409
[38] Num 19 14
[39] Tosaf Chullin 42b Sebaim 116a
[40] Sanhedrin 78a
[41] Mar Samuel Babylonian amore teacher of the law, judge, astronomer and physician Lived 165 257 Wunderbar in his monograph Biblisch Talmudische Medicin Riga and Leipzig 1850 1859, gives (in restes Heft p 28) a list of the medical sayings and opinions of Mar Samuel
[42] Rabbi Ishmael tanna of the first and second centuries
[43] Berachoth 45a
[44] The following authors discuss the subject Kazenelson L Anatomiya normalnaya i patologicheskaya St Petersburg 1889 (Russian) Rabbinowicz Israel Michel La medicine du Talmud Paris 1880 Kottelman L Die Ophthalmologie bei den alten Hebraaeren Hamburg and Leipzig 1910 Preuss Julius Biblisch talmudische Medizin, Berlin 1911

Medicolegal

Grounds for Refusals to Carry Out Contracts to Marry

(In re Oldfield's Estate (Ia.), 156 N. W. R. 977)

The Supreme Court of Iowa holds that where a man on learning that he has pernicious anemia refuses to carry out an existing contract to marry, no damages can be recovered therefor. The court says that it takes from certain authorities, based as it thinks on sound reasoning: First. That one may repudiate an agreement to marry when, subsequent to the making of the contract, he becomes afflicted with a loathsome disease which, on the consummation of the marriage, may be communicated to the spouse and to the offspring born of such marriage. Second. When, after the making of the contract to marry, he becomes afflicted with a fatal and incurable malady, and the consummation of the marriage would hasten his death, he is not bound to perform by consummating the marriage, and therefore is not liable in damages for such failure. Or, in other words, that there is implied in every contract to marry that the parties will not endanger life or health in the consummation of the marriage, and that where illness or disease comes on one after making the contract to marry, such as would render marriage dangerous to his life, a breach of the contract, based on such unavoidable and such unanticipated condition, is excusable. The court does not mean by this that the danger should be simply problematic, or a possible contingency—one that may or may not be a resultant consequence of the act of consummating the marriage—but one in which the evidence renders reasonably certain the inevitable consequence of such an act. Where the malady is of such a fatal character that he cannot enter into the marriage relation and receive any of the benefits which grow out of, and are involved in, the relationship established by the consummation of the marriage he is excused. Third. That where one is stricken, before the time arrives for the consummation of the marriage with a fatal malady, and has but a few days or weeks or months to live, and the evidence makes this reasonably certain, he is excused from the consummation of the marriage, and, being excused, his estate, on his death, is not liable in damages for such failure. These are implied conditions in the agreement to marry, and the agreement to marry is voided by their happening, and, the agreement being void no liability for damages results from the failure to perform. The first proposition rests on public policy, as well as on the conditions herein suggested. The consideration for every agreement to marry is found in the consummation of that agreement by marriage. Each has bargained to give and receive, on that day, all that is implied in the marriage relationship—all that grows out of the marriage relationship. If, by the act of God before the time fixed for the consummation of the marriage, either party is rendered incapable of giving that which the contract calls for, the other party may repudiate the agreement to marry because of the failure, through the act of God, of the very consideration on which the promise rests. It may be that the very condition that renders him incapable of giving, renders him wholly incapable of receiving any of the consideration which, under the consummated contract, he is entitled to. The giving and receiving are mutual obligations. One is a condition for the other. If the woman may repudiate the contract because the man has become, by the act of God, in such a condition physically as to render him incapable of giving to her all that, under the consummated contract she is entitled to then the man may, the contract being mutual, refuse to perform when by the act of God he has become wholly incapable of receiving any of the consideration which the consummated contract entitles him to. One cannot give to another that which the other is wholly incapable of receiving. This court would hold, rather, that the consideration for the original agreement to marry has been destroyed by the act of God and that, what is claimed to be a repudiation of the contract is simply a communication to the opposite party of the happening of an implied condition in the original contract which rendered the contract incapable of performance.

Evidence of Use of Mails to Defraud

(Samuels vs. United States (U. S.) 232 Fed. R. 536)

The United States Circuit Court of Appeals, Eighth Circuit, affirms a judgment of conviction of the defendant, who was charged with having used the mails to promote a scheme to defraud, in connection with which he advertised himself as "Professor H. Samuels" and the remedy exploited as "Prof. H. Samuels' Systematic Remedy." The court says among other things, that there was no error in the admission in evidence of the advertisements of the defendant, published in many newspapers, paying to one advertising firm as much as $175 000 in one year for this advertising nor in the admission of letters from various parties claiming to suffer from many different ailments—one from a broken nose, another from rupture another from syphilis, one from goiter, one from a bullet wound in the thigh—and asking whether or not the remedy would cure them. To these letters he replied that from the testimonials in his possession other persons had been cured from such ailments by the use of his medicine. The medicine, as he described it in his circulars, was a clear liquid, and to be administered through the eyes, and would serve as a natural nerve vitalizer. In his replies to these letters, he explained that "the optic nerve is the only large nerve that comes to the surface and the use of this medicine will affect every part of the body, thus causing the different organs of the body to perform their proper functions." It was urged that in the letters and advertisements the defendant claimed only what had been said or written to him by those who had used his preparation, and that therefore these representations were not his but those of his patients. But the gist of the offense was not what others thought, but whether he knew them to be false. Sending them out with knowledge that they were false, he made them his own. The fact that these letters circulars and advertisements were not set out in the indictment did not prevent their admissibility, in a case of this nature. As the fraudulent intent was one of the material allegations in the indictment, evidence of other and similar ventures by the accused were properly admissible as bearing on the question of intent. The evidence was also admissible that the defendant was not a great scientist a man of scientific education, and a man of letters and learning, as claimed in his advertisements and which was charged in the indictment to be untrue. On the other hand, it was not error to refuse to admit in evidence a copy of the defendant's publication on the eye. At best it was merely a self-serving statement. If he wanted to prove that he was a great scientist by reason of having written and published that book he should have introduced witnesses who were qualified to testify on that point. The jury was not the proper body to examine the book and determine from it whether he was a great scientist or not. Besides no foundation had been laid to prove the real author of the book. He may have employed a scientist to write it and published it as his own work. The extravagant claims made for the preparation to cure almost all the diseases known, many of them of a nature which could be cured only by surgery, the undisputed fact that the preparation contained nothing but ordinary hydrant water of the city of Wichita where it was prepared, with a little salt and sugar in it the minute trace of boracic acid found in it being indigenous to the hydrant water of that city, the high price charged for it, at first $5 a bottle afterward $3 a bottle when the cost of its preparation was trifling, the testimony of physicians that it had no therapeutic value whatever—all these proofs certainly justified the submission of the case to the jury to determine whether the so-called medicine was merely a scheme to defraud and that the mails had been used for the purpose of carrying it out. One of the important questions in issue was what the defendant knew to be the true facts and not what others believed. If he knew that the medicine was not a cure for the many ailments claimed for it and in fact for none the fact that many of those who used it believed that it had cured them would be no defense. The evidence of his patients bore on his intent and therefore was properly admitted, but it was for the jury to determine from all the evidence what his intention was regardless of what some or all of his patients believed.

Society Proceedings

COMING MEETINGS

Am Assn for the Study and Prev of Inf Mort Milwaukee Oct 19 21
American Association of Railway Surgeons Chicago, Oct 17 19
American Public Health Association, Cincinnati, Oct 24 27
Clinical Congress of Surgeons Philadelphia Oct 23 28
Delaware State Medical Society Milford, Oct 9 10
Idaho State Medical Association Twin Falls, Oct 5 6
Kentucky State Medical Association, Hopkinsville Oct 24 27
Medical Association of the Southwest, Ft Smith, Ark Oct 2 4
Minnesota State Medical Association, Minneapolis Oct 11 13
Mississippi Valley Medical Association Indianapolis Oct 10 12
Nevada State Medical Association Reno Oct 10 12
New England Surgical Society, Boston, Oct 5 7
New Mexico Medical Society Albuquerque Oct 11 13
Southern Medical Association Atlanta, Nov 13 16
Vermont State Medical Society St Johnsbury Oct 12 13
Virginia State Medical Society Norfolk Oct 24 27
Wisconsin State Medical Society Madison Oct 4 6

COLORADO STATE MEDICAL SOCIETY

Forty Sixth Annual Session held at Glenwood Springs Sept 5 7 1916

(Continued from page 975)

President's Address Abdominal Pain

Dr John R Espey, Trinidad E individual at some time experiences pain It is the general experience of any lapse of normal health and is nearly always present in disease I believe that while pain persists nature still hopes for a cure either spontaneously or by some action which she is trying to suggest Peritoneal pain requiring operation and in which operation offers a reasonable hope of effecting a cure continues to be more or less agonizing, but how ominous a portent is it when that pain suddenly ceases without a removal of the cause While there may be exceptions, the sudden stopping of pain in the presence of peritonitis is a precursor of dissolution In the present era, any investigator noting a gastric pain would look carefully into the right iliac fossa in his search for a cause He would also remember that a diseased gallbladder more frequently gives gastric symptoms than those strictly symptomatic of its own diseases In the upper abdomen the palm of the hand will cover an area containing the pyloric region, the duodenum, the head of the pancreas, the gallbladder and common duct and the hilum of the right kidney These organs are the seats of diseases that give rise to pain as a most prominent symptom It is largely by the reflections and radiations of pain that we are given a clue to the organ affected When pain and tenderness are observed in the abdomen below the umbilicus, we must consider the possibility of enteroptosis and that the pain may come from organs normally situated above the kidney, stomach or gallbladder, also that pelvic diseases of the urinary bladder, ovaries and extra-uterine pregnancy may develop upward In cases of bilateral pain or tenderness in this region, ovarian and parametritic affections should be regarded in women and also conditions about the neighboring hernial openings

Diagnosis of Menstrual Reflex Through the Tubes

Dr J N Hall, Denver A girl of 15 was admitted to St Joseph's Hospital moribund, and seen at once by Dr Leonard Freeman and myself She had never menstruated She was in collapse, with a slightly distended abdomen, with more or less uniform tenderness and rigidity, and a small amount of fluid in the abdomen There was a history of cramping pain and vomiting, a rise of temperature to about 100 F, a very rapid and feeble pulse, pallor and collapse, with death after about forty-eight hours The urine was not obtained The chest was negative The diffuseness of the abdominal signs, the lack of definite tenderness at the site of the appendix, the absence of a history of digestive symptoms, and the evidence of internal hemorrhage as shown by pallor, collapse, rapid, feeble, running pulse, and fluid in the abdomen led me to suggest to Dr Freeman that it might well be a case of reflux from the fallopian tube in an attempt at menstruation, with obstruction which prevented the normal flow At the postmortem examination we found the abdomen half filled with tarry blood, and the leaking tip of the tube was easily identified The hymen was not imperforate, as we anticipated, but an obstructive closure existed high in the vagina The upper vagina, uterus and tubes were distended with blood of the same character as that in the abdomen We were unable to say whether the obstruction was developmental or cicatricial in character, but in the absence of any history I believe it to have been of the former nature In this case the infectious element predominated over the hemorrhagic one in the symptomatology

Congenital Pyloric Stenosis

Dr John F Binnie, Kansas City, Mo The great symptoms of congenital hypertrophic pyloric stenosis are: 1 Explosive, expulsive vomiting with resultant emaciation 2 Visible gastric peristalsis 3 Persistent constipation 4 Oliguria 5 Tumor, not always palpable Treatment by means of properly regulated diet and perhaps of antispasmodics usually promptly leads to disappearance of the symptoms In doubtful cases roentgenology is valuable in diagnosis Maylard, William Russell and others describe congenital pyloric stenosis in adults Such stenoses are ringlike, uniform narrowings of the pylorus without any evidence of present or past inflammation and are discovered during exploratory gastrotomy for obscure gastric symptoms If these surgeons are correct in their findings and interpretations, such stenoses are probably the sequellae of cured or unrecognized congenital hypertrophies

Only in doubtful cases is it justifiable to attempt a cure by medicinal and dietetic means Conscientious lavage may keep the stomach so empty that vomiting and peristalsis may cease to be symptoms and yet the patient be starving

Gastro-enterostomy has been the favorite operation with most surgeons and has given excellent results It has the advantage that its steps are much more familiar to the general surgeon than are those of the much more complicated classical pyloroplasty As one eminent and experienced surgeon remarked to the writer, in gastro-enterostomy it is much easier to correct any mistakes one may make than in the other operation Anterior gastro-enterostomy is supposed to be easier than posterior but has the evident disadvantage of a long loop of jejunum above the anastomosis and hence there is danger of obstruction by kinking due to the weight of biliary and pancreatic secretions, etc, in this loop pulling it down This is the true cause of the so called vicious circle. Posterior gastro-enterostomy, if performed by the no-loop method, has no such disadvantage and is not a difficult operation

Botulism

Dr George H Curfman, Salida Up to recent times the reports of outbreaks of botulism were confined to meat as a source of poisoning For a century it has been understood that improper pickling or canning of meats was essential for the production of the disease In the Darmstadt outbreak in 1904, in which the poisoning occurred in a cooking school, twenty-one became ill after eating bean salad Of this number eleven died Landmann believed that the *Bacillus botulinus* had been carried into the can along with some little piece of leftover meat, which might readily be found in any kitchen It was also suggested that the spores of the organism was carried in on the beans from the fields In this country all or nearly all the reported outbreaks have been due to canned goods All of the reported outbreaks have occurred on the Pacific Coast, with the exception of one in Boston, in which the source of poisoning was thought to be minced chicken

Meats, especially liable to botulinus infection, such as sausage, salt pork and preserved meats, should never be eaten uncooked Meats presenting a rancid butyric acid-like odor should be destroyed The brine used in corning meats should contain at least 10 per cent of salt, as the organism cannot develop in such a solution Particular attention should be paid to sausage casings, to see that they are free from fecal masses and that they have been carefully cleaned with some antiseptic solution prior to use

Cystoscopy in the Insane a Preliminary Report

Dr Philip Work, Pueblo The physical difficulties encountered in doing cystoscopic work among the insane are not as great as among the sane The sensibilities are not so acute and the physical malformations are little, if any, more prominent The mental attitude of the patient must be carefully determined beforehand, for it is inadvisable to cause undue mental excitement for the sake of a physical examination unless there is urgent indication for its performance Permanent influences are apt to be unfavorable rather than favorable It is impossible to formulate any data on bladder capacity There is no vesical pathology except that of the organic disease or as a result of profound mental depression and the latter only from attendant mechanical causes Treatment of the vesical pathology has a negligible effect on the majority of psychoses

Fasting

Dr C D Spivak, Denver With reference to rest in bed in severe cases I follow the method of Weir Mitchell to the letter 1 Absolute rest in bed Sitting is not allowed under any circumstances The bed pan is used 2 Diet In many severe cases of gastro-intestinal disorders the best bill of fare is abstinence One, two or even three days' fasting will do no harm in cases of ulcer, dyspepsia, and diarrhea of all kinds and varieties Nutritive enemas can be employed in cases in which a longer period of fasting is necessary When food by the mouth is allowed it must be given in small quantities, no matter whether liquid or solid, and at regular intervals 3 Poultices The poultices take the place of splints They may make the patient feel comfortable and keep him warm and at rest In severe cases the poultices are applied constantly during the day for one or two weeks in milder cases from four to eight hours daily Although I use all the three above-mentioned measures even to this day, I have changed my opinion regarding the relative importance of each and also changed the definition of rest as applied to the treatment of gastro-intestinal disorders

From observations made by eminent men on professional fasters, on students, soldiers, and workingmen and from my own limited observations on patients and on myself, it was found that the process of fasting is not combined with pain or distress During the first day or two there is a craving for food at meal time and one is haunted by the ghosts of beef-steaks and turkeys At the end of the second day or the beginning of the third day the desire for food may be entirely absent Eventually a normal and healthy appetite comes and then the stomach and intestines are found in a condition to do their work efficiently

Infections of the Seminal Vesicles

Dr William M Spitzer Denver The symptoms of spermatocystitis may be grouped under four headings—nervous, sexual, urinary and constitutional symptoms

The nervous symptoms are melancholia extreme mental depression and headache In the extremely acute stage of spermatocystitis, usually occurring between the sixteenth and twenty-fifth day of an acute gonorrhea the onset is characterized by frequency, tenesmus, burning and terminal bleeding, all due to the posterior urethritis in part and oftentimes by inability to urinate This retention demands catheterization A rectal examination now discloses, either on one side or both, a large, bulging hot prostatic mass, heretofore diagnosed as prostatic abscess After a few days as a rule, this abscess ruptures into the urethra, the rectum or the skin of the perineum in the order named as to frequency This is not a prostatic abscess but is always a vesicular abscess due to the closure of the ejaculatory ducts in the presence of pus in the vesicle and is an extremely dangerous illness, resulting on rather rare occasions in death from general peritonitis, or from general sepsis

The constitutional symptoms, if I may so term them, are endocarditis, myocarditis, myositis in various locations and so-called gonorrheal rheumatism or gonorrheal arthritis

Many of these cases go on to resolution automatically Of those which do not, consistent, properly performed stripping of the vesicle will clear up another large percentage, and the disease will not recur if all the other lesions in the genito-urinary tract are at the same time cured Stripping the vesicles consistently and properly cures some cases Injection of the vesicle it is claimed cures some that do not give way to stripping, and what vesiculotomy or drainage of the vesicles will do remains to be seen

DISCUSSION

Dr Oliver Lyons, Denver The differential diagnosis in the early stages is difficult and a little mismanagement at this time may breed a good deal of mischief The varieties of symptoms are due to the anatomic proximity of the vesicles to the ureter the bladder, the peritoneum, and its nerve supply This disease is frequently accompanied with prostatitis or posterior urethritis Owing to the anatomic proximity of the vesicles to the bladder we frequently find in routine cystoscopic examinations the mucous membrane of the bladder covering the vesicles hyperemic and edematous There is a mild trigonitis This in all likelihood will give rise to frequent painful, urgent urination and in the acute cases perhaps to complete retention of urine In many of the chronic or subacute cases it is not uncommon for the patients to carry from 2 to 4 ounces of residual urine These cases are also accompanied with the usual typical mucopurulent discharge and sometimes the patients will have a perfectly clear sparkling urine, the only abnormality being perhaps a reaction for albumin

Dr J F McConnell, Colorado Springs Fuller's method of stripping the seminal vesicles is extremely hazardous in tuberculous seminal vesiculitis because of the danger of setting up new infection and spreading the infection already established To the rectal feel after the stripping there is an increased tenderness as well as enlargement Tuberculin is extremely valuable in the treatment of tuberculous seminal vesiculitis

Cesarean Section

Dr Louis H McKinnie, Colorado Springs In twenty-eight cases I have performed three operations in generally contracted pelves the internal conjugate of which measured 6 8 and 9 cm respectively, two in flat pelves, measuring 9 and 8 cm Four patients, some of whom were permitted to go into trial labor not through choice, but through lack of measurement and observation had measurements of 10, 11, 12 and 9 cm There were two deformed pelves, in two there were no measurements on which reliance could be placed, the internal conjugate being made out as best we could at 4 and 5 cm In these eleven cases there have been one maternal and two children's deaths Two of the operations were performed on the same mother One objection against cesarean section is once a cesarean section, always a cesarean section This woman on whom I advised the first operation absolutely declined the second and said she would deliver herself or die Four cases were placenta previa

I have operated in ten cases of eclampsia with no deaths These patients were all in more or less coma when the operation was done all of them had had one or more convulsions I prefer gas oxygen for this operation To me it carries less danger in the eclamptic than ether or chloroform because it has less effect on the kidneys The patient is quickly under the anesthesia and the uterus contracts much more promptly DeLee does not like gas oxygen, stating that it will not relax the abdominal wall, and unless the child is delivered rapidly it will be asphyxiated Of 28 cases, there were 29 children maternal deaths one from infection, children four one death caused by head being crushed by forceps but living at the time of delivery, one died suddenly six hours after delivery, twins, premature, twins not diagnosed since the mother was absolutely unconscious when found fetal heart sounds present the size leading us to believe that it was about at term

DISCUSSION

Dr H R Bull, Grand Junction About three years ago I was called seventy-five miles to see a woman who was reported to be having severe hemorrhages at term I found her in a log cabin with a centrally implanted placenta, showing there was considerable loss of blood She had had three hemorrhages previous to the time I saw her It became a question of what was the right thing to do, whether in a log cabin to do Braxton Hicks' version with a mortality of at least 50 or 60 per cent to the child and 80 per cent to the mother under these conditions, or to try to get her to a hospital and do a cesarean section I chose the latter alternative I narcotized her put her on the train, and took her to a hospital where I did a cesarean section on her, delivered her of a living child, and she made a good recovery

Dr Thomas A Davis, Portland There are a certain number of women with lesions of the heart who can be delivered by cesarean section safely, but could not go through the regular routine of delivery

Dr H R McGraw, Denver In placenta previa I think cesarean section is an ideal operation, although in a great number of cases this operation is done where the old methods could probably be used just as well In tuberculosis I should consider cesarean section a dangerous procedure I do not use gas-oxygen for the reason that I find I cannot get sufficient muscular relaxation

Surgical Tuberculosis of the Peritoneal Cavity

Dr Oscar M Shere Denver Laparotomy per se must not be regarded as a cure in tuberculous peritonitis and its empiric performance has no place in scientific surgical therapy Removal of the localized focus in the abdomen is the only rational form of treatment in this disease In the chronic forms surgery should be limited to those instances in which there is great tension from effusion or intestinal obstruction due to adhesions Energetic hygienic measures as well as a properly administered tuberculin treatment will greatly improve the results attained in these cases

The Present Status of Roentgen Therapy

Dr Samuel B Childs Denver In the treatment of superficial epitheliomas the Roentgen ray can effect a permanent cure in more than 95 per cent of the cases, and the results obtained from a cosmetic standpoint are superior to those obtained by any other method of treatment In leukemia and Hodgkin s disease a symptomatic cure is greatly enhanced by the use of deep Roentgen therapy In uterine hemorrhage in carefully selected cases, a cure can be expected in over 95 per cent At present however, deep Roentgen therapy seems indicated chiefly in the treatment of uterine hemorrhage in those cases in which an operation is undesirable In exophthalmic goiter we have a remedy in Roentgen therapy which can relieve comparatively early the alarming symptoms in many cases, and if an operation is later deemed necessary the patient will be in a better condition to successfully stand it All operable deep-seated cancers, with adjacent lymphatic glands, should be thoroughly removed surgically and an area wide of the entire locality should be treated by the most approved methods of radiotherapy as soon after the operation as possible and as thoroughly as though the disease still existed From the results already reported in the treatment of deep-seated cancers postoperative radiotherapy can be depended on to diminish materially the present high percentage of recurrences All patients with inoperable cancer should have the benefit of radiotherapy supplemented by electro-coagulation in cases suitable therefor

Spontaneous Pneumothorax in the Tuberculous

Dr Charles O Geise Colorado Springs In two cases a spontaneous pneumothorax developed while the patient was under treatment by artificial pneumothorax My experience with spontaneous pneumothorax in the tuberculous has been decidedly unfavorable as to prognosis no patient under my observation having entirely recovered I have attempted the withdrawal of the fluid and the introduction of equal amounts of air or nitrogen with only partial success I have attempted extensive rib resection in three cases with death in two and marked improvement in one these fluids have become purulent at periods varying f
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14 Id Effect of Alcohol on Size of Yolk of Pigeon s Egg O Riddle and G C Basset Long Island N Y —p 425
15 *Id Sexual Differences in Fat and Phosphorus Content of Blood of Fowls* J V Lawrence and O Riddle, Long Island N Y —p 430

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6 **Adequacy of Vegetarian Diet**—Since, apparently, nothing is known regarding the chemical natures of certain dietary essentials, and since the unknown factor which is present in certain fats seems to contain neither nitrogen nor phosphorus, the authors have proposed to discontinue the term vitamin and have suggested the terms fat soluble A and water soluble B The fat soluble A which is essential for growth and certainly in mammals for maintenance as well, was first observed in butter fat, but was later found to be present in many natural foodstuffs Butter fat and egg yolk fat apparently contain more of it than any other natural foods Animal tissues contain some of this unknown factor, especially the active organs It is present in small, but wholly inadequate amounts in the cereal grains A much greater content of it is found in the leaves of the forage plants, among which the authors have studied the flour prepared by grinding alfalfa leaves The vegetable oils generally contain very little if any, of this substance Water soluble B, appears never to be associated with the fat fraction as it is isolated from natural foods In their experimental diets the authors have employed either water extracts or alcoholic extracts of wheat embryo as a source of the water soluble B For the fat soluble A, 3 to 5 per cent of butter fat suffices Diets consisting of purified protein, dextrin and salts, which will not induce growth in young rats, likewise produce no growth when one of the additions, wheat embryo extract or butter fat is added but becomes adequate when both are present

The practically complete success in the nutrition of rats with strictly vegetarian diets made up of but three natural foodstuffs, and the failure attending the employment of a wider variety in the food mixture, emphasizes the fallacy of the assumption that the safest plan to insure perfect nutrition, is to include a wide variety in the selection of the constituents of the diet So long as definite knowledge is wanting concerning the specific nutritive properties of the constituents of the diet, variety will unquestionably make for safety, but will not by any means assure safety The conscientious adherence to a vegetarian diet by one who has no adequate technical knowledge regarding the subject of diet appears to be fraught with danger since among the foods of vegetable origin ordinarily consumed by human beings, several dietary factors are, as a rule, of an unsatisfacory chemical character It is certain that all of the components of a successful diet are present in foods of plant origin

Annals of Surgery, Philadelphia

September LXIV No 3

16 *Tumors of Carotid Body Report of Two Cases R Winslow, Baltimore—p 257
17 Transverse Incisions in Upper Abdomen A V Moschcowitz New York—p 268
18 Technic and Management of Operations on Stomach G W Crile, Cleveland—p 290
19 *More Radical Treatment of Duodenal and Gastric Ulcer J B Deaver Philadelphia—p 294
20 *Radium Treatment of Uterine Cancers J Ransohoff and J L Ransohoff Cincinnati—p 298
21 *Radical Operation for Cancer of Rectum and Rectosigmoid W J Mayo Rochester Minn—p 304
22 Sarcoma of Appendix M G Wohl Omaha—p 311
23 Fractures About Wrist in Childhood and Adolescence A C Burnham New York—p 318
24 Undescended Testis D N Eisendrath, Chicago—p 324
25 Acute Suppurative Pancreatitis Gangrene of Major Portion of Pancreas Recovery Determination of Pancreatic Function Three Years Subsequently R T Miller, Pittsburgh—p 329
26 Amebic Abscess of Liver A C Wood Philadelphia—p 335
27 System of Keeping Surgical Records C H Frazier Philadelphia—p 347
28 Surgical Follow Up' System C L Gibson New York—p 349

16 **Tumors of Carotid Body**—The two cases reported by Winslow do not differ materially from those that have been reported hitherto except that the growth in one case had only been noticed for two months previous to operation, which would suggest a malignant process If such was the case however a radical cure appears to have been attained as the girl was free from recurrence five years later The age of this girl (16) is also exceptional for the development of a carotid tumor The second case appears to conform more closely to the usual type of cases that have been reported The patient was a young man, aged 24 years, with a slow growing lump that had been noticed eight years before it became sufficiently large to suggest to him the propriety of a surgical procedure for its removal A very interesting phenomenon in the first case was the sudden and prolonged tachycardia that followed the ligation of the carotid vessels Apparently no injury was done to the pneumogastric nerve to cause a loss of its inhibitive action on the heart There was no perceptible influence on the pulse of the second case when the carotid was ligated, and it never exceeded 80 per minute during the time he was in the hospital In this case the pneumogastric nerve was not seen, but as he had paralysis of the left vocal cord and postoperative contraction of the left pupil damage must have been inflicted on the nerve itself or, more likely, on the left recurrent laryngeal branch Another point of considerable interest in this case is the fact that while the common carotid artery tunneled the tumor the external carotid was not seen

19 **Treatment of Duodenal and Gastric Ulcer**—Deaver reports his belief that all ulcers of the duodenum or stomach are best treated by excision In the presence of a strong clinical probability of gastric ulcer supported by positive Roentgen ray evidence or doubtful findings to palpation and inspection he does not hesitate to perform gastrotomy in order to settle the matter by inspection of the mucosa In the individual case the advisability of excision depends on the local condition Deaver says that no ulcer should be excised when subsequent closure and anastomosis present too great operative hazards It is in such cases that operations which depend on drainage and alteration of gastric chemistry have their field

20 **Radium Treatment of Uterine Cancers**—Of the three operable cases treated with radium by the Ransohoff's a clinical cure has been effected in each case

21 **Cancer of Rectum and Rectosigmoid**—Of 430 patients on whom a resection was done in the Mayo Clinic, 364 recovered from the operation Eliminating those who were operated on less than three years ago 33 3 per cent lived three years or more and 28 3 per cent lived five years or more, after operation Mayo says these percentages may be increased fairly to 37 5 and 35 8 per cents, respectively, by subtracting from the mortality figures the normal death rates for corresponding ages for periods of three and five years, that is, 4 2 and 7 5 per cents

24 **Undescended Testis**—Eisendrath urges that cases of true nondescent or ectopic descent of the testis should be operated at as early an age as the condition of the child will permit the lower limit being about 2 years Atrophy of the spermatogenic cells occurs in about 90 per cent of the cases of retained testis hence the necessity for early operation Eisendrath claims that tumor formation, torsion and the usual complications of the congenital hernia accompanying nondescent of the testis are not as rare as thought to be and must be taken into consideration in weighing the question of an operation Hypopituitarism is not the result of the nondescent but an independent and not infrequent accompanying condition The operation for nondescent that is, retained testis, has but little influence on this lack of development of the male sexual characteristics and one should be guarded in the prognosis for such cases, as well as in the possible development of the testis after operations in young adults

Archives of Diagnosis, New York

July IX No 3

29 *Recognition of Gouty Etiology in Chronic Joint Affections W Weinberger, New York—p 191
30 Early Diagnosis of Acute Infantile Paralysis L C Ager Brooklyn—p 205
31 Echinococcus Cyst of Left Lobe of Liver Discharging into Left Hepatic Duct R S Fowler Brooklyn—p 209
32 Subacute Catarrhal Cholecystitis An Early Type of Gallbladder Disease R S Fowler Brooklyn—p 214
33 Early Diagnosis and Treatment of Chronic Nephritis J H Barach Pittsburgh—p 218
34 Vascular vs Interstitial Nephritis B G R Williams Paris Ill—p 227
35 *Relation of Migraine to So Called Acidosis of Lichty Pittsburgh—p 230

reported to be having severe hemorrhages at term I found her in a log cabin with a centrally implanted placenta, showing there was considerable loss of blood She had had three hemorrhages previous to the time I saw her It became a question of what was the right thing to do, whether in a log cabin to do Braxton Hicks' version with a mortality of at least 50 or 60 per cent to the child and 80 per cent to the mother under these conditions, or to try to get her to a hospital and do a cesarean section I chose the latter alternative I narcotized her put her on the train, and took her to a hospital where I did a cesarean section on her, delivered her of a living child, and she made a good recovery

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15 Id Sexual Differences in Fat and Phosphorus Content of Blood of Fowls J V Lawrence and O Riddle, Long Island N Y —p 430

4 **Interauricular Time Interval** —Bachmann maintains that the time of onset of right and left auricular contraction, contrary to general belief, is not synchronous The excitatory wave originating in the sino-auricular node reaches the right auricle sooner than the left, hence the right auricle contracts an appreciable time before the left The time difference averages 0 013 second The most important path of conduction between the two auricles appears to be the interauricular band This special importance is demonstrated by the effects of crushing the band, the conduction being delayed 3 to 4 6 times the normal average The interauricular band has not the same importance relatively to the auricles that is possessed by the auriculoventricular band, as crushing does not cause a complete block Its importance lies in the circumstance that its fibers form the most direct interauricular path and that the rate of conduction is highest along this path

5 **Irritability in Different Parts of Stomach** —The stomachs of frogs, rabbits, cats and dogs were examined by Alvarez He found that the latent period for faradic, galvanic and mechanical stimuli is shortest around the cardia and along the lesser curvature so far as the incisura angularis These limits include also the most irritable part of the stomach The region of the greater curvature and fundus is much less irritable and often fails to react at all The pyloric ring is more irritable and reacts more promptly than does the rest of the antrum The duodenum is much more irritable than the pyloric antrum The posterior surface of the stomach is a little less irritable than the anterior surface, and the latent periods are longer With the exception of the cardia and lesser curvature, the stomach in situ is often quite refractory to stimulation in its cardiac half This seems to be due to nervous inhibition as it is less marked in the excised stomach, and still less so in strips of muscle cut from the fundus or greater curvature It seems likely that the nervous mechanism serves more to restrain the muscle—to keep it from reacting to every stimulus—than to render it more irritable The little work done so far on the stomach of man has given results in agreement with those obtained in animals

6 **Adequacy of Vegetarian Diet**—Since, apparently, nothing is known regarding the chemical natures of certain dietary essentials, and since the unknown factor which is present in certain fats seems to contain neither nitrogen nor phosphorus, the authors have proposed to discontinue the term vitamin and have suggested the terms fat soluble A and water soluble B The fat soluble A which is essential for growth and certainly in mammals for maintenance as well, was first observed in butter fat, but was later found to be present in many natural foodstuffs Butter fat and egg yolk fat apparently contain more of it than any other natural foods Animal tissues contain some of this unknown factor, especially the active organs It is present in small, but wholly inadequate amounts in the cereal grains A much greater content of it is found in the leaves of the forage plants, among which the authors have studied the flour prepared by grinding alfalfa leaves The vegetable oils generally contain very little if any, of this substance Water soluble B, appears never to be associated with the fat fraction as it is isolated from natural foods In their experimental diets the authors have employed either water extracts or alcoholic extracts of wheat embryo as a source of the water soluble B For the fat soluble A, 3 to 5 per cent of butter fat suffices Diets consisting of purified protein, dextrin and salts, which will not induce growth in young rats, likewise produce no growth when one of the additions, wheat embryo extract or butter fat is added, but becomes adequate when both are present

The practically complete success in the nutrition of rats with strictly vegetarian diets made up of but three natural foodstuffs, and the failure attending the employment of a wider variety in the food mixture, emphasizes the fallacy of the assumption that the safest plan to insure perfect nutrition, is to include a wide variety in the selection of the constituents of the diet So long as definite knowledge is wanting concerning the specific nutritive properties of the constituents of the diet variety will unquestionably make for safety, but will not by any means assure safety The conscientious adherence to a vegetarian diet by one who has no adequate technical knowledge regarding the subject of diet appears to be fraught with danger since among the foods of vegetable origin, ordinarily consumed by human beings, several dietary factors are as a rule of an unsatisfacory chemical character It is certain that all of the components of a successful diet are present in foods of plant origin

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16 *Tumors of Carotid Body, Report of Two Cases R Winslow, Baltimore—p 257
17 Transverse Incisions in Upper Abdomen A V Moschcowitz, New York—p 268
18 Technic and Management of Operations on Stomach G W Crile Cleveland—p 290
19 *More Radical Treatment of Duodenal and Gastric Ulcer J B Deaver, Philadelphia—p 294
20 *Radium Treatment of Uterine Cancers J Ransohoff and J L Ransohoff Cincinnati—p 298
21 *Radical Operation for Cancer of Rectum and Rectosigmoid W J Mayo Rochester Minn—p 304
22 Sarcoma of Appendix M G Wohl Omaha—p 311
23 Fractures About Wrist in Childhood and Adolescence A C Burnham New York—p 318
24 *Undescended Testis D N Eisendrath, Chicago—p 324
25 Acute Suppurative Pancreatitis Gangrene of Major Portion of Pancreas Recovery Determination of Pancreatic Function Three Years Subsequently R T Miller Pittsburgh—p 329
26 Amebic Abscess of Liver A C Wood Philadelphia—p 335
27 System of Keeping Surgical Records C H Frazier, Philadelphia—p 347
28 Surgical Follow Up' System C L Gibson New York—p 349

16 **Tumors of Carotid Body**—The two cases reported by Winslow do not differ materially from those that have been reported hitherto except that the growth in one case had only been noticed for two months previous to operation, which would suggest a malignant process If such was the case, however a radical cure appears to have been attained as the girl was free from recurrence five years later The age of this girl (16) is also exceptional for the development of a carotid tumor The second case appears to conform more closely to the usual type of cases that have been reported The patient was a young man, aged 24 years, with a slow growing lump that had been noticed eight years before it became sufficiently large to suggest to him the propriety of a surgical procedure for its removal A very interesting phenomenon in the first case was the sudden and prolonged tachycardia that followed the ligation of the carotid vessels Apparently no injury was done to the pneumogastric nerve to cause a loss of its inhibitive action on the heart There was no perceptible influence on the pulse of the second case when the carotid was ligated, and it never exceeded 80 per minute during the time he was in the hospital In this case the pneumogastric nerve was not seen, but as he had paralysis of the left vocal cord and postoperative contraction of the left pupil, damage must have been inflicted on the nerve itself or, more likely on the left recurrent laryngeal branch Another point of considerable interest in this case is the fact that while the common carotid artery tunneled the tumor the external carotid was not seen

19 **Treatment of Duodenal and Gastric Ulcer**—Deaver reports his belief that all ulcers of the duodenum or stomach are best treated by excision In the presence of a strong clinical probability of gastric ulcer supported by positive Roentgen ray evidence or doubtful findings to palpation and inspection he does not hesitate to perform gastrotomy in order to settle the matter by inspection of the mucosa In the individual case the advisability of excision depends on the local condition Deaver says that no ulcer should be excised when subsequent closure and anastomosis present too great operative hazards It is in such cases that operations which depend on drainage and alteration of gastric chemistry have their field

20 **Radium Treatment of Uterine Cancers**—Of the three operable cases treated with radium by the Ransohoff s a clinical cure has been effected in each case

21 **Cancer of Rectum and Rectosigmoid**—Of 430 patients on whom a resection was done in the Mayo Clinic, 364 recovered from the operation Eliminating those who were operated on less than three years ago 33 3 per cent lived three years or more, and 28 3 per cent lived five years or more, after operation Mayo says these percentages may be increased fairly to 37 5 and 35 8 per cents respectively by subtracting from the mortality figures the normal death rates for corresponding ages for periods of three and five years, that is, 4 2 and 7 5 per cents

24 **Undescended Testis**—Eisendrath urges that cases of true nondescent or ectopic descent of the testis should be operated at as early an age as the condition of the child will permit the lower limit being about 2 years Atrophy of the spermatogenic cells occurs in about 90 per cent of the cases of retained testis, hence the necessity for early operation Eisendrath claims that tumor formation, torsion and the usual complications of the congenital hernia accompanying nondescent of the testis are not as rare as thought to be and must be taken into consideration in weighing the question of an operation Hypopituitarism is not the result of the nondescent, but an independent and not infrequent accompanying condition The operation for nondescent, that is, retained testis, has but little influence on this lack of development of the male sexual characteristics and one should be guarded in the prognosis for such cases, as well as in the possible development of the testis after operations in young adults

Archives of Diagnosis, New York

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29 *Recognition of Gouty Etiology in Chronic Joint Affections W Weinberger New York—p 191
30 Early Diagnosis of Acute Infantile Paralysis L. C Ager Brooklyn—p 205
31 Echinococcus Cyst of Left Lobe of Liver Discharging into Left Hepatic Duct R S Fowler, Brooklyn—p 209
32 Subacute Catarrhal Cholecystitis An Early Type of Gallbladder Disease R S Fowler Brooklyn—p 214
33 Early Diagnosis and Treatment of Chronic Nephritis J H Barach Pittsburgh—p 218
34 Vascular vs Interstitial Nephritis B G R Williams Paris Ill—p 227
35 *Relation of Migraine to So Called Acidosis of Children J A Lichty Pittsburgh—p 230

36 Clinical Diagnostics of Diseases of Heart E E Cornwall, Brooklyn —p 233
37 Diagnostic Methods in Glenard's Disease, Enteroptosis A E Gallant, New York —p 267

29 **Gouty Etiology in Joint Affections** —Of the laboratory findings pointing to the gouty etiology in chronic joint affections, Weinberger says, the most reliance may be laid on the presence of undoubted tophi and on the observation of the characteristic uric acid curve during an attack The attack may occur spontaneously or may be produced by the addition to the food of a definite amount of purin Although it has not been shown that the ingestion of purin gives rise to an attack in all cases of polyarthritis due to gout, in the cases presented by the author the attack developed promptly While the diagnosis of gout may be further supported by other concurring data like high uricemia, low endogenous uric acid output and delayed elimination of exogenous uric acid, these factors alone are either ambiguous or not distinct enough to be of any decisive value

35 **Migraine and Acidosis of Children** —It is a common error, says Lichty, to interpret attacks of periodic vomiting in children and infants as being attacks of so-called acidosis when they are in reality precursors of a definitely established course of migraine The author has seen about nine patients who had so-called cyclical vomiting later called acidosis, and now have fully developed attacks of migraine In 700 cases of migraine he has obtained the history every now and then of bilious attacks with obstinate vomiting in childhood with migraine coming on at puberty He advises to search diligently for a hereditary history of migraine before interpreting a condition of acidosis in childhood or before the age of puberty

Archives of Internal Medicine, Chicago

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38 *Dissociated Jaundice C F Hoover and M A Blankenhorn Cleveland —p 289
39 *Comparison in Various Diseases of Carbon Dioxid Tension in Alveolar Air (Plesch Method) with Amount of Carbon Dioxid in Venous Blood (Van Slyke's Method) I C Walker and C Frothingham, Jr, Boston —p 304
40 *Chronic Influenza in Pulmonary Tuberculosis M L Hamblet and H L Barnes Wallum Lake R I —p 313
41 *Studies in Blood Pressure With Especial Reference to Diastolic and Pulse Pressure Readings W W Cadbury Boston —p 317
42 Subsequent History of Pellagrins in Spartanburg County, S C Who Survived Initial Attack J F Siler, P E Garrison and W J MacNeal, New York —p 340
43 *Treatment of Syphilis of Central Nervous System I C Walker and D A Haller Boston —p 376
44 *Blood Fat Before and After Splenectomy H Dubin and R M Pearce Philadelphia —p 426

38 **Dissociated Jaundice** —Hoover and Blankenhorn found true dissociated jaundice of hepatic origin in two cases of primary anemia and in two cases of lead poisoning In the four cases bile salts were found in the blood in large amounts Excepting in jaundice of hemolytic origin and in complete jaundice which has undergone renal dissociation, the authors have never found bile pigment without bile salts in the plasma They claim that bilirubin and bile salts may both be present in very marked concentration in the plasma and neither pigment nor salts appear in the urine Adsorption of bilirubin in the plasma may not only withhold the pigment from the renal filter, but also from the tissues, so there may be pronounced cholemia (pigmental) without choluria (pigmental) and also without icterus of the tissues When pigmental cholemia is present (in varying degrees) without choluria, the collodion sack will yield no pigment to an aqueous dialysate from the plasma When choluria attends cholemia (pigmental), the collodion sack will yield bile pigment to an aqueous dialysate from the plasma Bile salts will dialyze from plasma when no bile salts are demonstrable in the urine

39 **Carbon Dioxid Tension in Alveolar Air in Various Diseases** —A total of 116 observations were made by Walker and Frothingham on 100 different cases which represented thirty types of disease As a rule, cases were chosen in which there was not a complication of diseases They studied primary anemia, exophthalmic goiter, typhoid, lung abscess, chronic nephritis, syphilis, chronic cardiac disease, pneumonia, acute articular rheumatism, diabetes, gastric cancer, cirrhosis of the liver, acute nephritis, asthma and miscellaneous diseases In summing up these 116 observations it appears that in the great majority of the cases the carbon dioxid tension in the alveolar air, as collected by the Plesch method, corresponds with that as estimated in the venous blood by Van Slyke's method Exceptions were met in exophthalmic goiter, pneumonia and asthma, but even in these diseases, except during an attack of asthma, the variations occurred in only a very small percentage of the cases Subsequent studies on several of the cases in which marked differences occurred on the first examination showed practically identical results in the air and blood studies From these observations it seems to the authors fair to conclude that the carbon dioxid tension in the alveolar air, as determined by the Plesch-Higgins method, agrees very closely with the results obtained by the Van Slyke method of determining the amount of carbon dioxid in the venous blood and is therefore a very accurate index of the amount of carbon dioxid in the venous blood Furthermore, this method is applicable to a great variety of acute and chronic diseases

40 **Chronic Influenza in Pulmonary Tuberculosis** —Hamblet and Barnes endeavored to obtain data as to the frequency of influenza infection as a complication of phthisis, as to the frequency with which the symptoms of patients diagnosed as having pulmonary tuberculosis, but with negative sputum, may be accounted for by chronic influenza infection, and as to what extent the percentage of recoveries in sanatoriums for tuberculosis have been swelled by the inclusion of cases of influenzal bronchitis Of 100 patients, diagnosed as having closed tuberculosis whose sputums were cultured for influenza, at least ninety-six were negative Of 100 patients, diagnosed as having closed tuberculosis, influenza bacilli were recovered from six Of 100 patients, with open tuberculosis, influenza bacilli were recovered from seven Of twenty patients in whom the diagnosis of tuberculosis continued doubtful, the sputum was negative for influenza bacilli in all In none of the patients examined did the influenza bacilli occur in pure culture nor were they the predominating organism

41 **Studies in Blood Pressure** —An analysis of 305 patients made by Cadbury showed that about 68 per cent of cases of hypertension are found in patients between 40 and 69 years of age, the greatest number occurring between the ages 50 and 59 Almost three fourths of the cases, 72 8 per cent, had definite signs of chronic nephritis Arteriosclerosis was also common The next most common conditions were circulatory disturbances chronic myocarditis or valvular lesions Albumin is usually to be found at some time in cases of hypertension If it is persistently absent, the cause of the high blood pressure is generally vascular or cardiac disease, and not renal In hypertension cases with a normal heart load of 40 to 60 per cent, 85 per cent had chronic nephritis Of those cases in which the load was under 40 or over 60 per cent, only about 70 per cent were cases of nephritis When the load was under 40 per cent, the prognosis proved to be most unfavorable, but there were several cases without signs of cardiac decompensation Among those whose heart load was 40 to 60 per cent, only 28 per cent gave signs of cardiac decompensation, of those whose heart load was 61 to 99 per cent, there were 59 per cent with cardiac decompensation, and of those whose load was 100 per cent or more, 66 per cent showed signs of cardiac decompensation Hypertrophy of the heart without decompensation was most common in cases with a normal load, when the load was 100 per cent or over, there were the fewest cases of heart hypertrophy without decompensation and the greater number of decompensated hearts Subnormal diastolic pressures suggest the presence of aortic regurgitation and the absence of chronic nephritis

In cardiac decompensation the effect of digitalis was rather to increase pulse pressure and systolic pressure and cause a fall in the diastolic pressure Deaths in hypertension patients occurred most frequently between the ages of 40 and 60 years, and the underlying condition was either chronic nephritis o chronic disease of the heart, or a combination of the two More than half the deaths occurred with symptoms of uremia or apoplexy Twenty-eight per cent died with signs of progressive heart failure The patients in more than half the fatal cases had had a systolic pressure of over 200 mm, and 86 per cent had had diastolic pressure of over 100 mm

43 **Treatment of Syphilis**—Seventy-five patients with the following diagnoses have been treated at the Peter Bent Brigham Hospital, forty-eight cases of tabes dorsalis six of general paresis of the insane, sixteen cases of cerebrospinal syphilis, and five of syphilitic meningitis To these patients 450 intraspinal injections of salvarsanized serum and 350 doses of salvarsan were given The results of each treatment are summarized by Walker and Haller as follows Patients with recent syphilitic meningitis and cerebrospinal syphilis may be relieved symptomatically by intravenous salvarsan, the spinal fluid Wassermann reaction may become negative with 1 c c and the cell count may become normal Patients with long-standing cerebrospinal syphilis and tabes may be benefited symptomatically following salvarsan but little or no change occurs in the spinal fluid findings Patients with recent and those with late syphilitic meningitis, cerebrospinal syphilis, tabes and general paresis of the insane are markedly improved following the combination of intravenous salvarsan and intraspinal salvarsanized serum (Swift-Ellis method), and those who fail to improve under salvarsan alone do improve both in symptoms and in spinal fluid findings following this double treatment That intraspinal salvarsanized serum greatly benefits patients with central nervous system syphilis is shown by the fact that those with negative serum reactions and with positive spinal fluid findings are symptomatically relieved by this treatment In many patients the spinal fluid Wassermann reaction becomes negative with 1 c c, the cell count becomes normal and negative (Noguchi) globulin test is obtained following sufficient treatment with salvarsanized serum intraspinally without other medication

44 **Blood Fat Before and After Splenectomy**—Analysis made by Dubin and Pearce, before and after splenectomy, of the blood of dogs showed practically no change in the amount of total fats and unsaturated fatty acids, as expressed by the iodin value.

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45 Studies of Optic Nerve Atrophy in Association with Chiasmal Lesions C B Walker and H Cushing, Boston —p 407
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48 Case of Melanosarcoma of Orbit Treated with Radium E B Heckel Pittsburgh —p 465
49 Retrobulbar Neuritis with Central Scotoma from Toxic Action of Thyroidin M Standish Boston —p 469
50 Report of Removal of Tumor at Apex of Orbit with Preservation of Eyeball, Case of Plexiform Neuroma of Eyelid Microscopic Examination A Knapp, New York —p 475 —
51 Improved Capsule Forceps for Intracapsular Cataract Extractions F H Verhoeff Boston —p 479

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52 *Present Status of Alveolar Osteomyelitis (Pyorrhea Alveolaris) Its Causes and Treatment with Vaccines L S Medalia, Boston —p 367
53 Use of Emetin A C Reed, San Francisco —p 375
54 Peripheral Neuritis Following Emetin Treatment of Amebic Dysentery A R Kilgore Shanghai China —p 380
55 Dystonia Musculorum Deformans — Oppenheim s New Disease of Children and Young Adults I H Coriat, Boston —p 385

52 **Treatment of Pyorrhea Alveolaris with Vaccines**—'Pyorrhea alveolaris," so called, Medalia says, is in reality a chronic alveolar osteomyelitis The sockets are enlarged medullary spaces of the maxillary bones while the so-called peridental membrane is in reality a ligament which keeps the tooth suspended in the alveolar cavity The mechanical causes are responsible for starting the disease, while the pyogenic bacteria (pneumococcus, staphylococcus, and M catarrhalis) are responsible for keeping it up Chronic alveolar osteomyelitis is a specific disease, though not in the sense that it is always due to one and the same organism, it is due to a variety of organisms Systemic diseases play only a secondary part in starting the disease, but may be caused by it and in turn become responsible for keeping up the local condition A great many rheumatic diseases, so-called, also a great many gastro intestinal affections are directly related to chronic alveolar osteomyelitis—"Riggs disease' The vaccine treatment of this disease, together with the proper attention to diet cures or relieves the systemic diseases, especially the rheumatic affections Vaccine treatment (immunotherapy) together with local mechanical treatment (and the proper attention to the general systemic condition of the patient) yields by far the best results in this intractable disease—chronic alveolar osteomyelitis

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94 Gastro Enterology and Surgery J C Johnson Atlanta, Ga —p 455
95 Alkaloidal Adjuvants in General Anesthesia R C Coburn, New York —p 460

93 **Primary Carcinoma of Lungs** —This paper is a study of four specimens of primary carcinoma of the lung Based on a slight increase in temperature, the presence of a cough, evidence of consolidation in the lung and the loss of flesh, each case was mistaken for one of pulmonary tuberculosis in an advanced stage Complete necropsies were held in each instance and no new growths were found other than in the lung The new growths in three instances begins in the large bronchus at the root of the lung, and extends along it into the substance of the lung In all three cases, the bronchial lymph nodes have been invaded and overgrown by the neoplasm The growth has extended into the pericardium in two cases In one case there was also a distinct invasion of the esophagus producing stricture In each lung there is a thickening of the pleura which is especially marked over the portion of the lung involved by the tumor

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150 Treatment of Trachoma H T Aynesworth, Waco Texas —p 836
151 Diphtheria Involving Sinuses Mastoid and Middle Ear F Vinsonhaler, Little Rock Ark —p 839

138 **Pellagra in Children** —A study of 200 pellagrous orphan children was made by Rice The facts in a large per cent of the cases of pellagra in one orphanage strongly discredit an essentially causative relation of corn The incidence of pellagra was much higher in children under 12 years of age The differences discovered in the diet of the smaller and larger children seem inadequate to account for this age distribution But there appears to be some relation between the amount of animal food consumed and the spread of pellagra in orphanages The predisposing factors age, sex hereditary weakness, poor nutrition and coincident diseases apparently were operative in this series of cases There was no evidence pointing to unsanitary conditions or to the insects as a cause of the spread of the disease

145 **Mesenteric Thrombosis and Embolism** —In twenty-five of thirty-four cases of this affection analyzed by Blackburn in which a clinical *diagnosis was made intestinal obstruction* was found in ten cases mesenteric thrombosis in three cases and suspected mesenteric thrombosis in one Strangulated hernia and 'acute surgical abdomen" were pronounced in two cases each The following diagnoses were made in one case each
Appendicitis appendicitis and peritonitis, peritonitis, acute
hemorrh[illegible] ncreatitis fecal impaction, intestinal perfora-
tion in [illegible] id ptomaine poisoning Pain was present
in twen [illegible] three cases It is described as
cramp li [illegible] ntense and agonizing It was
localized [illegible] two cases lower abdomen in
one, abo [illegible] left of umbilicus left half
of abdom [illegible] f umbilicus and above in
[illegible] l in ten cases In three

instances the pain was defined as localized at first, becoming general later In one instance as general at first, localizing in lower abdomen later In twenty cases tenderness was located as follows Six general, six right side, two left side, two median, two lower abdomen, one epigastric, and one at umbilicus and lower abdomen

Vomiting is mentioned alone in seven cases, nausea and vomiting in twelve The bowels were constipated in ten cases Distention is mentioned in twenty-seven cases, muscular rigidity is mentioned in four cases The temperature in most cases was normal or subnormal early in the attack, but may rise to 104 or 105 degrees, if progress of case is not too rapid Late in the attack with the collapse, the temperature frequently becomes subnormal again The pulse rate is almost always above 110 to 120 frequently 140 to 150 In the three cases in which the leukocyte count was recorded it was as follows Increased from 5 000 to 31,000 after admission (four days), 28,000 and 21 000 The order of frequency of the different symptoms was as follows distention, pain tenderness, pulse and temperature ratio nausea and vomiting, constipation tumor and melena It is worthy of note that melena, which is considered characteristic of this condition, was present in only three cases Most of these symptoms varied as to time of onset, localization, radiation, duration etc Apparently the ideal method of treatment consists in resection of the intestine, with an end-to-end or lateral anastomosis and closure of the abdomen, but the recoveries occurred after this method on account of the small amount of intestine involved rather than from the particular technic used In the cases with more extensive destruction of intestine, the drainage must be used after the anastomosis, or without it in extreme cases

FOREIGN

Titles marked with an asterisk (*) are abstracted below Single case reports and trials of new drugs are usually omitted

British Medical Journal, London

August 26 II No 2904

1 Prehistoric War Wound L F West and A Keith —p 281
2 *Salt Pack Treatment of Infected Gunshot Wounds J E H Roberts and R S S Statham —p 282
3 Plea for Ignoring Laudable Pus in Treatment of Septic Wounds M Donaldson E Alment and A J Wright —p 286
4 Secondary Infections of Joints in Acute Medical Ailments Report of Cases G H Edington —p 289
5 Death After Nitrous Oxid Oxygen and Spinal Anesthesia W E Robinson —p 291

2 **Salt Pack Treatment of Infected Wounds**—The method of dressing wounds with a firm pack of gauze and sodium chlorid tablets combined with a preliminary free excision of the wound and lacerated and infected tissues has given results which have effected revolutionary changes in methods of treatment During the last twelve months it has gradually supplanted other methods of treatment, until now the authors and others employ it in the majority of cases The operative details in connection with a wound naturally vary with the site nature and degree of infection of the wound For example wounds of the buttock by shrapnel ball or shell are invariably laid open in their whole extent If there are separate entry and exit wounds they are joined by an incision dividing the glutei down to the track between them Foreign bodies are removed and the necrotic tissue lining the track excised Bleeding points are tied with catgut, and after examination for bony or visceral lesions a salt pack is applied Such a wound is often ready for suturing within ten days to a fortnight

The superficial wound if small is excised so that it will admit a finger The full extent of the wound is then determined so far as possible by digital examination and unless essential structures are involved the whole area is laid open, all pockets being exposed to the end Foreign bodies including pieces of cloth and blood clot are carefully searched for and removed and all necrotic tissue cut away with scissors until a freely bleeding surface remains If the deep fascia or superficial muscles tend to come together and close the mouth of the wound sufficient tissue is excised to ensure that, when the salt pack is in place, the mouth of the wound will be widely open A conical wound not requiring the use of drainage tubes is thus produced In all cases side tracks and pockets are opened up so that they may be packed to the bottom In cases in which a fracture exists fragments, unless small and completely detached, are not removed With the exception of iodin for the skin they do not apply any antiseptic to the wound

Lancet, London

September 2 II No 4853

6 *Latent Tuberculosis C Y Wang —p 417
7 Diagnosis of Enteric Fevers in Inoculated Individuals by Agglutinin Reaction G Dreyer and E W A Walker —p 419
8 Method of Drop Measuring Liquids and Suspensions R Donald —p 423
9 Employment of Blood Transfusion in War Surgery E Archibald —p 429
10 Three Cases Illustrating Functional Consequences of Head Injuries T E Harwood —p 431
11 Heart and Active Service H J Seeuwen —p 432
12 *Use of Picric Acid in War Surgery T F Brown —p 433
13 Empyema Due to Infection by Bacillus Typhosus Para A C C Weeks —p 433
14 Surgical Treatment of Erythema Induratum of Bazin E Kondeleon —p 434
15 Case of Hereditary Syndactyly W E Le Gros Clark —p 434
16 Shiah Pilgrimage and Sanitary Defences of Mesopotamia and Turco Persian Frontier (To be continued) F G Clemow —p 441

6 **Latent Tuberculosis**—From the large amount of evidence accumulated Wang says one may draw the conclusion that the existence of latent tuberculosis in the human body has been abundantly proved Further, by means of the animal test it can be substantiated in a certain proportion of individuals otherwise not recognizable as tuberculous by the naked eye or the microscope, probably an average of about 12 per cent with perhaps variations at different periods of life How long tubercle bacilli may remain latent in the human body cannot be determined on the present knowledge of the subject but in the case of animals tubercle bacilli may reside in the tissues as long as 104 days without producing any specific changes

12 **Use of Picric Acid in War Surgery**—The value of picric acid was tested by Brown and his associates in the treatment of over 3 000 wounded patients They carried out the following routine treatment so far as practicable 1 To superficial wounds 1 per cent picric acid solution was applied on thin gauze The wound was thus left practically exposed to the air usually one dressing per day was sufficient 2 Suppurating sinuses were treated by syringing with 0 5 to 1 per cent of the solution twice daily and hydrogen dioxid solution used every two or three days to remove debris 3 Arm and leg baths with 0 5 per cent solution for thirty minutes were used for suppurating fractures and crushed tissues with an occasional bath of hypertonic saline as a change The results were uniformly good healthy and vigorous granulation and quick recovery taking place Several cases of septic compound fracture and injuries to bone cleared up in a remarkably short time. Deep septic wounds caused by shrapnel, etc granulated and were ready for skin grafting likewise It must be noted however that they found 1 per cent solution too strong for the delicate epithelium of new skin and weaker solutions 0 5 per cent and 0 2 per cent were used when the granulation reached the level of the surrounding epidermis A 0 2 per cent solution in water and spiritus vini rectificatus was used in several cases of erysipelas with excellent results

Annales de Médecine, Paris

July August III No 4 pp 323-459

17 Technic for Measurement of Blood Pressure (Recherches sur les appareils destinés a mesurer la tension artérielle chez l homme) A B Marfan and H Dorlencourt —p 323
18 *Changes in Viscosity of the Blood (Recherches sur la viscosité du sang humain) O Josue and M Parturier —p 343
19 *Varying Resisting Power of Leukocytes as Element in Prognosis (Recherches sur les variations de la résistance leucocytaire) P Mauriac —p 370
20 *The Urologic Syndrome in Meningococcus Meningitis P Cazamian —p 383

21 Tendon and Skin Reflexes in Case of Severed Spinal Cord (Les reflexes tendineux et cutanes, les mouvements de defense et d'automatisme dans la section totale de la moelle d apres une observation anatomo clinique) H Claude and J Lhermitte —p 407

22 Astasia Abasia with Vestibular Nerve Disturbances in Two Syphilitics (Deux cas d astasie abasie avec troubles du nerf vestibulaires chez des syphilitiques anciens) G Guillain and J A Barre —p 431

18 **Viscosity of the Blood** —Josue and Parturier emphasize that the viscosity of the blood can be estimated only when coagulation has been rendered impossible Otherwise the viscosity increases as soon as the blood leaves the vessels, long before coagulation becomes manifest All research on the viscosity of the blood that has been done with coagulable blood is fraught with error Works on the viscosity of blood that has not been rendered noncoagulable are thus based on erroneous data The best way to ward off coagulation is with sodium citrate There is an unmistakable parallelism between the viscosity and the number of red corpuscles All calculations of the viscosity should take into account separately the viscosity of the whole blood, of the plasma, and of the corpuscles By determining the viscosity of the whole blood and the plasma, that of the corpuscles can be deduced from them The viscosity of the plasma is most important for the metabolism, there is ample reason to assume that the viscosity of the fluid in which the corpuscles float is not without influence on the respiratory interchanges between the red corpuscles and the depths of the tissues to which they are bringing the oxygen But at the same time the blood is being pushed along by the heart into the vessels, and the viscosity of the whole blood is an important factor in the amount of resistance which the heart has to overcome and the amount of work it has to do The viscosity of the plasma is thus of greatest importance for the interchanges in the organism, the total viscosity, for the mechanics of the circulation

19 **The Resisting Power of the Leukocytes as an Element in the Prognosis** —Mauriac expatiates on the information to be derived from the leukocyte and the advantage of studying it to determine its resisting power, its activity and its physiologic value The means we have for this are not so numerous that we can neglect any, and the technic he has worked out for estimating the resistance of the leukocytes is simple and instructive Three drops of blood are dropped into a tube containing 0 5 c c of a solution of 2 06 gm sodium citrate and 3 6 gm sodium chlorid in 1,000 gm distilled water After shaking the tube it is set aside for an hour Then it is shaken up anew and the suspension of the corpuscles is aspirated with a pipet On a dry slide a rectangle is traced with the pipet, from 3 to 4 cm long by 2 cm wide and this is covered entirely with the blood solution Aspirating the excess of fluid leaves a moist homogeneous surface, which dries at room temperature in half an hour The leukocytes are then stained with a saturated solution of methylene blue in physiologic salt solution The stain is left in contact for twenty minutes, then rinsed off lightly with running water, and the slide is left to dry Under the microscope the leukocytes show blue, the reds are not visible

By this technic the leukocytes are not injured and show up finely Some are seen practically normal, with distinct outline and nuclei These are the ones that have resisted the action of the citrate solution The ratio between these resistant leukocytes and those that have become more or less disintegrated, is the index of leukocyte resistance In the normal subject, fasting, this index—Resistance divided by Fragility—ranges from 0 7 to 0 9 The resistance of the red corpuscles can be estimated at the same time After an hour's contact with the citrate solution the tint of the supernatant fluid ranges from that of water to a pink or bright red, proportional to the number of reds that have been laked He gives the curves of the leukocyte index in a number of cases of pneumonia, meningitis, nephritis and erysipelas They show that the effectual defensive reaction on the part of the leukocytes occurs when the young and active white corpuscles show first an increased resistance and then an abrupt drop to extra fragility He calls this the *oscillation de defense* Unless the fragility phase is preceded by the phase of extra resistance, the outlook is bad A fixation abscess and exposure of the spleen to radiotherapy induce polynucleosis, and hence augmented resisting powers, at first and later the disintegrating phase

The power of regeneration of the leukocytes is the primary condition for success of medication, and all therapeutic measures which act by leukocytolysis are ineffectual so long as they disintegrate only the old corpuscles or those without physiologic importance Worse than ineffectual, for they may do direct harm It is necessary to proportion the leukocytolytic effect to be produced to the functional efficiency of the leukocyte-producing centers The functional capacity of these centers should be studied and means to augment the polynucleosis applied Only when this has been realized and the resisting powers of the leukocytes increased should we venture to apply measures that act by leukocytolysis, such as fixation abscess, Roentgen exposures of the spleen and injection of colloidal metals The *oscillation de defense* was observed regularly in every case with a favorable outcome It was not directly dependent on the temperature, the dyspnea, or other objective symptom, and it also seemed to be independent of the fluctuations in the resisting power of the reds On the other hand, in meningitis the increased resistance of the leukocytes always coincided with the purulence of the cerebrospinal fluid, and there was a sudden and marked change to great fragility when the fluid cleared up

20 **Polyuria in Meningitis** —Cazamian discusses the urologic syndrome in the course of meningococcus meningitis, calling attention to the polyuria It failed to appear, in his experience, only in the twenty-two fatal cases among his 101 meningitis patients It seems to be secondary to the thirst and polydipsia caused by irritation of the nervous centers as the intensity of the inflammation subsides The polydipsia polyuria may thus be regarded as a sign that the patient has started on the road to recovery

Archives des Maladies du Cœur, etc, Paris

August IX No 8 pp 333 376

23 Soldier s Heart D Pletnew (Moscow) —p 333

Paris Médical

August 26 VI No 35 pp 165 180

24 *Squill Extract as Rat Poison (La lutte contre les rats des tranchees) P Lereboullet —p 165

25 *Thread Drainage Wards Off Fistulas after Operations on the Anus (La guerison rapide des fistules et des abces de l anus sans incontinence des matieres) H Chaput —p 166

26 Pulmonary Tuberculosis in Cheesy Stage Cured by Artificial Pneumothorax R Burnand —p 168,

27 Hydrotherapy for Results of War Wounds (Hydrotherapie et blessures de guerre) H Dausset and M Leulier —p 170

28 Hammer Hand with Ulnar Paralysis (Le signe de la main en marteau et de la main plantaire dans la paralysie cubitale) Hesnard —p 176

24 **Rats in the Trenches** —Lereboullet says that nearly 50,000 rodents have been destroyed in the French trenches in the last four months The main reliance is on rat dogs and on squillitin, the toxic extract of fresh squill bulbs

25 **Anal Fistula** —Chaput curets to the remotest recesses and passes a thread through the fistula, a silkworm gut or No 10 rubber, and ties it to form a loop He gives the details of the technic for this filiform drainage, as he calls it for all varieties of fistulas and abscesses in the region of the anus In ten cases of abscess the cure was soon complete, and in twenty cases of anal fistula the majority were cured in from fifteen to twenty days, without recurrence later and without cutting the sphincter

Presse Médicale, Paris

August 24 XXIV No 47 pp 369 380

29 *Semeiologic Importance of Signs of Pleurisy at the Apex (Les signes de la pleurite du sommet et leur valeur dans le diagnostic de la tuberculose pulmonaire de l adulte L adenite et la lymphangite nodulaire susclaviculaires) E Sergent —p 369

30 Fracture of Neck of the Femur H Chaput —p 371

31 Constriction of the Jaws After War Wounds L Imbert and P Real —p 372

32 *Immobilization and Adjustable Traction for Fractured Femur (Appareil tracteur auto extenseur) A. Manson —p 373

33 Fracture of Lower Jaw A Herpin—p 374
34 *Technic for Artificial Eyes After Wounds of the Orbit (Prothèse orbitaire) G Valois and J Rouveix—p 375

29 **Signs of Pleuritis at the Apex**—Sergent ascribes great importance to inflammatory processes in the pleura in the apex region, not only for the diagnosis of tuberculosis but for distinguishing the form and the stage of the tuberculous process, while, on the other hand, it explains many blunders in diagnosis This apical pleuritis is frequently accompanied by unequal pupils and enlargement of the supraclavicular glands The pupil on the side affected is liable to be dilated or contracted, and the gland just back of the clavicle, at the external margin of the sternocleidomastoid, can be felt When much enlarged it is soft, but otherwise hard Sometimes it feels like a cord knotted along its course This supraclavicular adenitis has nothing in common with cervical adenitis It is connected with inflammation of the pleura in the apex region much more than with inflammation of the parenchyma at the apex It is an objective palpable sign of pleuritis at the apex He has found in cadavers a chain of lymphatics starting in the focus in the apical pleura and terminating in the supraclavicular ganglion palpated during life When the ganglion is large and soft, the pleuritic process is probably active When the pleural focus has long healed over, the gland shrivels and grows hard This apical pleurisy is nothing new, but physicians seem to have forgotten it The changes which it induces are liable to lead to the mistaken diagnosis of infiltration of the apex when in reality there is only a benign lesion, a simple cicatrix, relics of a long past process

32 **Immobilization and Adjustable Traction for Fractured Femur**—Manson places the leg horizontally in a long narrow wooden box with a big screw in the center of the foot end The foot is fastened to a small board, and this is hooked by a spiral spring to the screw in the footboard of the box The screw can thus exert traction as needed while the spring equalizes it The counter pressure is not against the groin but against a plaster plastron enclosing the root of both thighs and the buttocks The box extends above the knee and the intervening space is bridged with plaster, like the handle of a basket, on both sides of the thigh

34 **To Rebuild the Orbit**—Valois and Rouveix use a funnel which expands at the tip of the funnel to form a cup just the size of the space under the eyelids This cup is worked beneath the eyelids, which brings the funnel upright Plaster is then poured through the funnel, and thus a cast of the orbit is easily obtained From this cast they construct a hollow, soft rubber elastic shell which fits into the orbit The front is of hard rubber, and this reproduces the aspect of the eye The elastic shell transmits the movements of the orbit to the artificial eye even when there is not a trace of a stump left

Correspondenz-Blatt fur Schweizer Aerzte, Basel

August 19 XLVI No 34 pp 1057 1088

35 *State of Fallopian Tubes During Puerperal Fever (Etat des trompes dans les fievres puerperales et leur role comme voie de propagation) H Chassot—p 1057
36 *Treatment of Dislocated Fractures of Long Bones C Arnd—p 1069
37 *Operative Treatment of Flatfoot C Arnd—p 1074
38 *Roentgenoscopy of Joints (Die Darstellung der Gelenke durch Rontgenstrahlen) C Arnd—p 1075

35 **The Fallopian Tubes in Puerperal Fever**—Chassot has been making a special study of the part played by the tubes in the spread of the infectious process in nine cases of puerperal fever with necropsy He cut sections at the isthmus, at the opening into the uterus, and at the farther end The clinical course in each case is described and compared with the microscopic findings in the tubes Nothing was found to indicate that the tubes had much to do with the spread of the infection In only one case was there an old catarrhal infection that might possibly have been the cause of the uterine infection In one other case there was pyosalpinx, presumably secondary to the ulceration in the uterus In three cases and in one tube in a fourth case the tubes were apparently entirely normal In the five others there was a slight, only microscopic catarrhal trouble This noninvolvement of the tubes shows that pyosalpinx cannot be referred to an old pregnancy as often as is generally assumed at present We must remember also that the streptococci set up acute processes as a rule, while gonococci are more the agents of chronic catarrhal conditions

36 **Treatment of Dislocated Fracture of Long Bones**—In reducing a fracture of this kind, the traction from the muscles is the most serious obstacle to be combated Arnd gives here an illustrated description of how to guide this muscular traction to be a help instead of a hindrance He cuts a groove in the end of each stump and lays a long stout nail in the grooves which form a slanting double plane The stumps are then pulled apart by the operator and an assistant The head of the nail at the same time is pulled down to form a lever The tip swings through a circle of from 90 to 150 degrees and levers the lower stump into place It is held in place by the nail which is then driven slanting into the spongiosa of the upper stump The head of the nail keeps the other stump from slipping out of place, and the lengthwise pull of the muscles coaptates the stumps while the nail prevents them from slipping to one side The procedure is illustrated

37 **Operative Treatment of Flatfoot**—Arnd has been quite successful in treating flatfoot by displacing the tendon of the tibialis anticus to shorten it and give it a firm hold so that it pulls the arch of the foot into shape The tendon is left intact It is merely transferred to a deep groove chiselled for the purpose on the posterior aspect of the tuberosity of the scaphoid bone If the tuberosity does not protrude enough for the purpose, the articulation between the astragalus and the scaphoid can be opened and a groove dug for the tendon here, suturing the ligament over the tendon again It may be necessary to loosen the tendon sheath for part of the way, but this does not injure the tendon The groove must be deep enough to hold the tendon in its place The results of this method of correcting have been very satisfactory during the eighteen months to date

38 **Roentgenoscopy of Joints**—Arnd says that by injecting ether into a joint the capsule is inflated and instructive roentgenograms can thus be obtained He leaves the cannula in place so that if the pressure seems too much, part of the ether can escape He has thus obtained fine pictures of the destructive processes in deforming arthritis, of free bodies in the joints and dislocation of the meniscus About 10 c c ether are injected cautiously on account of danger of embolism A very slight general anesthesia may follow, but it is transient The ether had all been absorbed by the next day and no disagreeable consequences were observed

Gazzetta degli Ospedali e delle Cliniche, Milan

August 17 XXXVII No 66 pp 1025 1040

39 Wounded Vessel Should be Ligated Close to the Lesion (Alcuni casi di impropria legatura delle arterie nella continuita del vaso) G Masnata—p 1027

Pediatria, Naples

July XXIV No 7 pp 385 448

40 *Immunity Reaction and Vaccination against Scarlet Fever (Osservazioni e ricerche sulle reazioni immunitarie spontanee o provocate nella febbre scarlattinosa) G Di Cristina—p 385
41 *Mongoloid Idiocy (Ancora sull idiozia mongoloide) U Provinciali—p 392 (Contributo alla etiopatogenesi dell idiozia mongoloide) G Di Giorgio—p 403
42 *Thyroid and Parathyroid Insufficiency in Mother and Nursling (Sindrome da insufficienza tireo paratiroidea familiare) F Laureati—p 411

40 **Immunity Reaction in Scarlet Fever and Preventive Vaccination**—Di Cristina recalls that Caronia published in 1914 an account of research on scarlet fever which demonstrated that the scales from a desquamating patient seem to contain a specific antigen An extract of these scales added to serum from a scarlet fever patient and guinea-pig complement induced the deviation of complement reaction The test seems to be positive at all stages of the disease, and aids in the differential diagnosis Di Cristina reports research undertaken to determine whether this extract of the scales might not be potent as a vaccine, and whether children vaccinated with it might not be rendered immune. He prepared

a vaccine with 15 c c convalescent serum and 10 gm of desquamated shreds and scales, adding 0 8 per cent phenol and 1 c c of the guinea-pig complement, incubating for fifteen hours at a temperature of 37 C (98 6 F) Then the serum was aspirated, centrifugated and distributed in vials that were then sealed in the flame The child was injected subcutaneously with 1 c c of this vaccine every second day By the second or third injection the specific deviation of complement occurred He has treated with this vaccine ten children who had never had scarlet fever The results are given in seven children between 2 and 5 years old, treated in this way for from three to six days The total amount of vaccine injected was from 0 75 to 4 c c

The children thus treated had all been casually exposed to the disease, but it did not develop in any of them Encouraged by this success, he left some of the vaccinated children in the scarlet fever ward for several days Some of the children on entering the hospital had been placed by mistake in this ward They were vaccinated after twenty-four hours' contact with scarlet fever cases, and they were allowed to sleep with patients in the eruptive and the desquamating stages, but none of the vaccinated children contracted the disease even when they were kept in the bed with scarlet fever children for several days It is evident, he declares, that the scales contain something which confers immunity on the healthy organism The immunity reaction thus induced can be rendered manifest by the deviation of complement test

41 **Mongoloid Idiocy**—Provinciali reports 2 cases from Parma and Di Giorgio 16 from Palermo and each discusses the etiology and the prognosis The former gave thyroid treatment or treatment for syphilis with energy and perseverance, but without appreciable effect except overcoming constipation Di Giorgio is inclined to incriminate the ductless glands, a pluriglandular insufficiency, as the cause of mongoloid idiocy There was a history of some chronic infection or emotional shock among the parents as a rule, in his cases The mother of one was of a nervous temperament and the news of her husband's shipwreck reached her during this, her seventh pregnancy The Wassermann reaction was positive in one or both parents in 4 cases, one of the mothers had a goiter, and 3 were tuberculous, one had had malaria during the pregnancy, and 3 of the fathers were hard drinkers while a neuropathic taint was known in 4 of the families The Abderhalden test for thyroid tissue was positive in 2 cases and improvement under prolonged thyroid treatment was evident in 2 cases

42 **Familial Thyroid-Parathyroid Insufficiency**—Laureati agrees with Concetti that there is a physiologic insufficiency of the thyroid in the newly born It gradually is overcome either by the development of the child s thyroid or by its getting in the mother s milk the products of her sound thyroid If the mother or wetnurse has thyroid insufficiency, the child may suffer from lack of thyroid secretion and fail to thrive unless given to another woman to nurse The infant may present symptoms of thyroid deficit or thyroid excess or there may be abortive forms or a subphysiologic thyroid state One young woman had no symptoms suggesting thyroid trouble until she became pregnant when she gained 44 pounds in weight Her weight dropped back to normal after the birth of the child but she was not able to nurse it long, and suffered from tremor and insomnia The child did not thrive until a wetnurse was provided, when it began to gain at once and was soon placid and sturdy In another pregnancy the woman had the same temporary increase in weight

Laureati thinks there can be no doubt that thyroid insufficiency was responsible for the abnormal conditions in both mother and child Concetti noticed that thyroidectomized goats were unable to suckle their young adequately, but produced more milk under thyroid treatment Their milk production dwindled again when the thyroid treatment was suspended Laureati relates that a woman developed an incomplete type of exophthalmic goiter at the close of the last three of her six pregnancies The disturbances persisted for three months and her nursling during this period became restless and lost flesh, with digestive disturbances and debility Under phosphorus and thyroid treatment, with bromids, for the mother and artificial feeding for the child, the trouble was soon broken up By the tenth month the child's progress was normal in every respect In both these cases the infants presented symptoms of the same type as the mother

In another family, the first four of the six children of a healthy country couple grew abnormally in length and weight during the first months of life, and had laryngospasm when 4 or 5 months old and two died in convulsions After weaning, the children became normal in weight and growth generally As term approached in the sixth and seventh pregnancies, Laureati gave the mother a course of thyroid treatment and the children developed normally and had all the appearance of health The right lobe of the mother's thyroid is somewhat hypertrophied, but she has never presented any symptoms suggesting exophthalmic goiter The convulsions and tendency to tetany in this family suggest that the parathyroids in the infants were insufficient Schiffer has reported the case of a family with five children all of whom had tetany in infancy when they were given artificial feeding but not while they were nursing their mother Her milk evidently supplied antibodies which maintained the proper balance When this was withdrawn, tetany manifested itself Thyroid treatment is not only useful in warding off or curing the syndrome from thyroid and parathyroid insufficiency but it serves also as a touchstone to reveal the true cause of abnormal development of nurslings and prove its direct dependence on the internal secretion of the thyroid gland in the nursing woman Measures to restore thyroid functioning to normal tend to restore the balance in the ductless gland system

Policlinico, Rome

August 20 XXIII No 34 pp 1019 1042

43 Conservative Treatment of the Wounded (A proposito della limitazione delle mutilazioni) I Scalone —p 1019 (A proposito della questione delle mutilazioni e dell isolamento scientifico in cui si trovano le unita sanitarie avanzate) U Camera —p 1023

Siglo Medico, Madrid

LXIII No 3269 pp 497 512

44 *Classification of Blood Diseases (Clasificacion de las hemopatias) G Pittaluga —p 498

No 3270 pp 513 528

45 Jacksonian Epilepsy with Paralytic Phenomena Occurring during Two Attacks of Malaria at Three Years Interval in Young Woman (Caso de encefalopatia paludica) E F Sanz —p 514

44 **Classification of Diseases of the Blood**—Pittaluga classifies them in ten groups as the leukemias, anemias, hyperplasias of the lymph glands and spleen granulomatosis new growths (lymphosarcoma chloroma and myeloma), new growths of the blood-producing organs, parasites of these organs and of the blood, and changes occurring in both in infectious diseases and in general disease of the organs and apparatus and what he calls hemodystrophies This latter term comprehends the cases of disease of the blood in which the biochemical changes predominate over the histopathologic and there is a more or less prominent neuropathic factor evident directly or indirectly through the endocrine glands and an inherited or familial influence, directly or indirectly The hemodystrophies include the hemorrhagic diatheses, purpura, scurvy hemophilia, paroxysmal hemoglobinuria and hemolytic jaundice Polycythemia and clorosis also belong here The neuropathic basis of chlorosis, with the endocrine factors (internal secretion of the ovary), the abnormal metabolism of iron and formation of the hemoglobin molecule—all stamp chlorosis as a hemodystrophy

Russkiy Vrach, Petrograd

XV No 25 pp 577 600

46 *Need for More Institutional Care of Dermatologic Cases P V Nikolsky —p 577

47 Care of Laborers in Workshops and Factories D P Nikolsky —p 583 Commenced in No 24 —p 557

No 26 pp 601 624

48 *Drop Wrist Reflex or Grasping Reflex (O ladonnom sgibatelnom reflexie ili reflexie zakhvativaniya) V M Bechterew —p 601

49 Gunshot Wounds of the Skull V A Shaak—p 602
50 Treatment of Infectious Diseases with Leukocytolysis Produced by Action of Roentgen Rays on the Spleen (Liechenie zaraznikh bolieznei leukocytolizom vizivaemim osvieshtsheniem selezenki Roentgen ovskimi luchami) I I Manukhin—p 616 Commenced in No 22—p 522
51 Improved Technic for Staining Horny Substance (O novom sposobie okraski rogovogo veshtshestva) A M Vasiutochkin—p 619

46 **Skin Diseases in Russia**—Nikolsky pleads for more hospital care of patients with cutaneous lesions He cites statistics to the effect that there were in 1913 in the Russian empire 13,915,299 known cases of various skin lesions The lists included 1 248,002 syphilitics, and 1 866 cases of leprosy, scabies 5 475 594, parasitic lesions 194 343 and other skin lesions (eczema erythema) 6,029 769 Of this tremendous mass of patients with skin diseases only 100,686, that is 0 7 per cent, had been given hospital care

48 **The Grasping Reflex**—The flexor wrist reflex or the grasping reflex recently described by Yanishevsky (abstract 81 in The Journal Sept 9 p 844) has been noted by Bechterew in focal lesions of the cerebral hemispheres late stages of paralytic dementia, diffuse arteriosclerosis of the brain accompanied by hemiparesis and also in a case of paralysis agitans While this finger grasp reflex is a normal phenomenon in infants, it is inhibited in adults, and appears only when the higher inhibitory cortical centers are destroyed The center for this reflex Bechterew is inclined to locate in the optic thalamus

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

August 19 II No 8 pp 593 704

52 *Medical Education (Een en ander over hooger onderwijs in de geneeskunde) G van Rijnberk—p 593
53 *Cancer Mortality at Rotterdam (Sterfte aan kanker en andere kwaadaardige gezwellen te Rotterdam over de jaren 1902 1914) J Sanders—p 604
54 Treatment of Infectious Processes in the Orbit (Aanwijzingen voor de behandeling der oogkasontsteking) H Burger—p 614
55 *Prospects with Operative Treatment of Brain Tumors (Iets over de chirurgie der hersengezwellen) H J Boeve—p 617
56 *Case of Epidemic Meningitis in Barracks A J Korteweg—p 622
57 Present Status of Knowledge in regard to Chemical and Physical Factors Predisposing to Cancer G F Gaarenstroom—p 632

52 **Medical Education**—Van Rijnberk says that there is scarcely any one who does not have ideas on the best way of training men to be physicians Professors students and laymen all have decided views on the subject and these ideas are at variance at nearly all points except the conviction that there is room for improvement in medical education He continues, 'But there is no hope of extensive modification of medical education Too many factors cooperate to prevent this Universities are conservative institutions It is difficult to lead them into new paths, mainly from the often just fear that introduction of new untried methods may interfere with good and tried ones A medical school, besides is an expensive pet Every innovation, every improvement clinics laboratories, equipment, cost handfuls of money, and scarcely is one branch of learning provided for than others develop calling for additional expense And so medical education always limps along behind onrushing science, and even at the best, it is a long way behind

The questions as to the number, the extent and the proportions between the various special fields of medicine are constantly pressing for solution These special fields are ever increasing in number and each is ever broadening its scope A consequence of this would be that the curriculum and the years of study would be constantly growing longer if it were not for the unanticipated fact that the study of each special field makes the study of each other field much easier There is such an intimate connection between them all that deepening one s knowledge in one brings almost regularly with it a better comprehension of all the allied fields and thus the loss of time in one period is made up in another Even allowing for this however the expansion of all the special fields embraced in the medical curriculum brings the question how to proportion them all and do justice to them without making the medical course interminably long In the answer to this question there are two opposing views One takes the stand that the solution must be sought in the limitation of the time devoted to the preliminary and laboratory training The other view is that nothing should be done to disturb the fundamental studies but that the untenable fiction of the general competence of the physician should be dropped, and he should be trained in special efficiency in a narrower field"

Van Rijnberk then refers to the talks on this subject at the recent conference on Medical Education as published in The Journal Feb 26, 1916 p 626 translating into his own tongue Professor Lyon s address, nearly in full, with running comment He remarks in conclusion Is not all this extremely well put and absolutely true? There is no dividing line in anatomy, physiology, etc, between what is of practical use and what is not just as there can be no sharp dividing line between anatomy and physiology and between them both and medical art and science Boundaries are imaginary lines not Chinese walls, and whatever is good physiology is good medicine In this I heartily concur Nothing is more dangerous for so-called applied science than utilitarianism The broader the biologic foundations, the better the leechcraft"

53 **Cancer at Rotterdam**—Sanders analyzes the statistics at Rotterdam from 1902 to 1914 bearing on the mortality from malignant tumors, and compares them with figures from other cities and lands Up to the age of 55 women are subject to cancer more than men but above this age the reverse is observed The mortality for the men from cancer was 6 02 per cent and for the women 7 34 per cent of the total mortality during the twelve years Calculated by 100,000 inhabitants it was 82 2 for the men and 91.2 for the women The corresponding figures for a five-year period or longer are for the whole of the Netherlands 107 6 (men) and 108 5 (women), England 75 1 and 100 8 and Stuttgart 63 8 and 100 0 The cancer mortality is thus highest in the Netherlands Men develop cancer of the lip, mouth and esophagus—the organs exposed to irritation from tobacco and alcohol, while malignant disease affects in women the organs liable to feel the direct effects of a pregnancy Any theory dealing with cancer must take these two facts into account During the twelve years the number of deaths from cancer of the sexual organs has diminished while that of the digestive organs has increased in both sexes

55 **Brain Tumors**—Boeve discusses the prospects from operative treatment, and urges that reports and statistics be kept in a way that permits accurate comparison of cases and results of treatment He cites the reports of the leading authorities in this line They show that the outcome is growing gradually better Tooth s method of estimating the ultimate results seems the most instructive He classifies his cases according to the time they survived from the beginning of symptoms to death or date of writing The average survival thus for cases of endothelioma given operative treatment was forty-six months and without operation eighteen months A weak point of this method however is the determination of the first signs of trouble In this way two parallel series of operative and nonoperative cases, revised each year to date would prove very instructive Boeve adds that the earning capacity should be included in the statistics Horsley had a patient survive nine years without recurrence after removal of an endothelioma of the dura which had grown through the skull but the man has never been able to work since being paralyzed and blind on one side Tooth s method of keeping the records would also show the actual benefit from palliative operations

Boeve emphasizes further the vital importance of an early diagnosis before irreparable harm has been done and while conditions facilitate operative intervention It is more difficult to operate when the intracranial pressure is high When choked disk has lasted for some time vision is scarcely likely to be improved by removal of the tumor or a decompressive operation The last few years have added much to our knowledge of brain tumors so that an early diagnosis is now possible with a tumor in the lateral recess the pituitary body, the cerebellum or the motor zone The main progress in diagnostic measures has been in the systematic study of defects in the visual field, Barany's research, and the study of the functions of the pituitary body

56 **Epidemic Meningitis**—Korteweg relates that a young soldier was brought to the hospital one very hot day in a comatose state, with headache and vomiting, all ascribed to heat stroke although the temperature was only 37 2 C (99 F) and the pulse fluctuating averaging 80 He was treated as for heat stroke, but by the next day the symptoms indicated meningitis The course of the case was somewhat unusual in that the temperature and pulse declined while the brain symptoms improved Not until the fifth day was the temperature up to 38, and it fluctuated, reaching 39 by the ninth and then dropping again to subnormal but becoming normal as convalescence advanced The intense headache kept up until, by the eighth day, it occurred only on moving the head The Kernig sign did not subside entirely until the nineteenth day The whole company, 251 men, was examined for carriers and six were found, but all but one were found free from the meningococci a week and two weeks later and none were found the third week The entire company was isolated until the carriers were sifted out, and these were still isolated in a separate building until two examinations gave negative findings During the entire four weeks the whole regiment was spared all fatiguing exercises, and knapsacks and cartridge belts were laid aside No further case of meningitis developed

Finska Lakaresallskapets Handlingar, Helsingfors

LVIII No 7 pp 1057 1168

58 *Fatal Iodoform Intoxication in Tuberculous Pleurisy A von Bonsdorff—p 1057
59 *Study of the Blood in Simple and Exophthalmic Goiter and Thyrotoxicosis T Sandelin—p 1076
60 Etiology of Spring Conjunctivitis O Wallin—p 1083
61 *Knotting of the Small Intestine (Om tunntarmsknutar) L J Lindstrom—p 1091
62 Malformation Causing Spurious Congenital Diaphragmatic Hernia V Makela—p 1107

58 **Fatal Iodoform Poisoning After Intrapleural Injection**—Von Bonsdorff has been very successful in treating tuberculous pleurisy with intrapleural injection of 1 10 iodoform glycerin in doses ranging from 5 to 15 c c Until recently he has never had a mishap from it although he has made 119 such injections in the last few years Now he reports the fatal case of a merchant of 49 who had a tuberculous process in the left lung with bilateral pleurisy with effusion He improved under artificial pneumothorax, tapping the pleural effusion and injection of the iodoform glycerin Four injections were made in the course of eight weeks, the dose 10 c c, the last dose 12 c c This was supplemented by injection of 3 c c and 2 c c in an abscess at the point of the old puncture Three days after the last injection the man collapsed, with convulsions and maniacal attacks, speedily fatal The man had been weakened not only by his tuberculosis but by abuse of alcohol

59 **Blood Picture with Abnormal Thyroid**—Sandelin has been making a special study of the blood picture since 1912 in every case of exophthalmic goiter, simple goiter and thyroid disturbance of any kind He here records the findings in thirty-two cases The tests were made on the fasting subject, early in the morning, after testing the technic on the healthy The blood picture in all with abnormal thyroid functioning was practically identical, so that this cannot serve to differentiate exophthalmic from simple goiter, or as testimony for or against operative treatment The findings also in sixteen patients from six months to two years after operative treatment of exophthalmic goiter confirmed anew the slight import of the variations from normal in the blood picture, except that when there was lymphocytosis it usually dropped to normal in time

61 **Knotting of the Small Intestine**—Lindstrom reports a case and compares it with six similar ones on record Operative treatment was applied in five cases, with recovery of three, including his own A long and narrow mesentery in his case favored the gradual twisting of the intestine into a knot until the sudden complete occlusion first attracted attention to it He resected 103 cm of the lower portion of the ileum with prompt recovery

Hospitalstidende, Copenhagen

August 23 LIX No 34 pp 825 844

63 *Research on Gastric Secretion in Thousand Patients, especially Secretion of Pepsin and Mucus (Undersøgelser over Ventrikel sekretionen) G Wiltrup—p 825 Commenced in No 33—p 801
64 Technic for Inducing Abortion at Fifth Month (8 Tilfælde af Abortus provocatus i Tiden omkring 5te Svangerskabsmaaned) V Esmann—p 833

63 **The Stomach Secretion in a Thousand Patients**—Wiltrup classifies and tabulates the findings in 1,000 patients at the medical department of the Copenhagen general hospital They confirm the view that increased secretion of mucus with an Ewald test meal is a sign of organic abnormal conditions It occurs early, often before the pepsin shows signs of anything wrong With the more chronic affections the secretion of mucus is less, and it is rare to find any mucus in the most pronounced forms of chronic gastritis with complete achylia and apepsia The admixture of mucus fluctuates from day to day, and is most profuse with exogenous gastritis His sixteen tables show among other things that anacidity is practically always associated with reduced or lost peptic power Also that hypopepsia is always a sign of gastritis This may have existed for some time before the hypopepsia manifests itself Some of the cases prove that hypopepsia may exist as the only secretory anomaly with an organic gastric affection Admixture of a small amount of mucus with the stomach contents after an Ewald meal is a frequent phenomenon and of no import in the smaller amounts But when present in considerable amounts, this is always a sign of gastritis, generally the acute and the ectogenous forms of gastritis The diagnosis of acid gastritis is evident when normal acid findings are accompanied by considerable secretion of mucus The peptic power then is normal or reduced In 74 cases of chronic polyarthritis there was achylia in 26, hypochylia in 9, and the peptic secretion was normal in 37, while 2 had hyperacidity In 77 cases suspected of gastric ulcer there was hyperacidity in 19 and normal pepsin findings in 72, with hypersecretion in 23

Ugeskrift for Læger, Copenhagen

August 17 LXXVIII No 33 pp 1397 1442

65 *Insufficiency of Glands with Internal Secretion (Insufficientia pluriglandularis) K H Krabbe—p 1399

65 **Pluriglandular Insufficiency**—Krabbe describes the case of an imbecile, now 18 years old, who presents a long array of symptoms characteristic of deficiency of the internal secretion from a number of ductless glands, such as pigmentations, sclerodactylia, microcephaly, retention of teeth and senile changes in the teeth, cryptorchidism, aphasia, achylia, atrypsia, renal diabetes latent tetany and lymphoblastosis, with various other metabolic, nervous and trophic disturbances, including scanty growth of hair and senile aspect This list of anomalies includes some we are accustomed to see from insufficiency of the thyroid, of the parathyroids, suprarenals, testicles, and perhaps from the pancreas, but the picture of insufficiency *is not complete for any of these organs* The special feature of the case is the combination of the infantile and the senile He describes the case mainly to illustrate the necessity for examining the function of each of the ductless glands in suspicious cases, the growth of hair, the skin, the genitals and the conditions of growth, roentgenoscopy of the hypophysis, examination of the teeth, the epiphysis lines, and bones of the wrist, microscopic examination of the blood, the blood pressure, sugar in the blood and in the urine and, finally, the electric responses of the muscles and their excitability and the mental status By determining early enough any deviation from normal in these findings, we may be able to start the proper treatment in time to ward off irreparable damage Although to date only thyroid and ovary extract treatment has given unmistakably favorable results, yet there is reason to suppose that time will enlarge the list of effectual therapeutic agents of this kind, both for monoglandular and for pluriglandular insufficiency The way to hasten this is by careful study of the syndromes involved

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THE RELATION OF CHOKED DISK TO THE TENSION OF THE EYEBALL

AN EXPERIMENTAL STUDY *

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DETROIT

In presenting the subject which I have chosen for your consideration today, I shall depart somewhat from the traditions of the section, and invite your attention to a purely medical topic

Some years ago in an effort to collect a large number of tonometric readings in order to determine the average normal tension of the eyeball, I had the tension taken of the eyes of all the patients in the hospital and outpatient department, whenever possible Among this number were six cases of brain tumor Some time later when compiling the histories of the brain tumor cases, I observed that when the amount of the choked disk was the same in the two eyes, the tension was equal or nearly so, and when the swelling was greater in one eye than in the other, the tension was different in the two eyes, being least in the one showing the greater amount of swelling

I reported these observations before the Ophthalmological Society in 1911, and have since been able to verify, in several cases, the conclusions there drawn

During the past year I have been carrying on a series of experiments on dogs and monkeys to prove, if possible, the relation between choked disk and the tension of the eyeball, in the case of artificially increased intracranial pressure

It is not my intention to review in detail all the hypotheses that have been advanced to explain the occurrence of choked disk in association with cerebral tumors It is essential, however, to refer briefly to the most important of these theories, in order to make clear the reasons for our experimentation

In general there are three principal theories advanced to account for the causation of choked disk, namely, the inflammatory, the toxic or chemical, and the mechanical These three factors alone or in combination have been urged as the possible cause of the swelling of the disk in cases of increased intracranial pressure

The mechanical theories of the causation of choked disk depend variously on increased intracranial pressure, increased intravaginal pressure, disturbance of return blood flow, and obstruction of lymph flow from the vitreous through the intravaginal to the subarachnoid space The exact sequence of events, however, has not been determined Whether or not the increased intracranial pressure must be associated with increase in the amount of the cerebrospinal fluid is still in dispute Likewise, whether the pressure in the nerve sheath first compresses the veins and second the lymph spaces, or in the reverse order, is in doubt Assuming that the venous engorgement occurs first, there are at least four possible points where the vein may receive its maximum compression, namely, at the lamina cribrosa, in its intraneural portion, where the vein leaves the nerve, and in the intravaginal space Clinical and experimental evidence has been produced to influence the various authors to advance a theory as to the most important point of pressure, but there is no agreement as to the point most often attacked

The original theory of von Graefe,[1] that the increase of intracranial pressure, caused by a tumor, acted to compress the cavernous sinus, and that this gave rise to an engorgement in the ophthalmic vein, was disproved by Seseman, who showed that the ophthalmic vein had such free connection with the facial that an obstruction to its flow into the sinus could not produce a choked disk

The discovery by Schwalbe[2] that the intravaginal space at the optic nerve communicates with the subarachnoid space of the brain, led Schmidt-Rimpler[3] to advance the theory that when there was an increase of the intracranial pressure, a quantity of cerebrospinal fluid was pressed into the lymph space of the sheath of the optic nerve, where it produced a papilledema and a secondary venous congestion

Manz[4] could not confirm the claim of Schmidt-Rimpler that a system of canals in the lamina cribrosa communicated with the arachnoid space, but added to the Schmidt-Rimpler theory the suggestion that, by the means of hydrops of the sheath, the intracranial pressure caused compression of the vessels in the end of the optic nerve as they pass through the lamina, which pressure resulted in an edematous swelling and infiltration Since that time this has been known as the Schmidt-Manz theory, and according to Gowers is generally accepted in Germany as offering the most satisfactory explanation of choked disk

Saenger holds that the sheath is first distended by cerebrospinal fluid, and as the intravaginal pressure rises, the optic nerve is compressed and the communication of its sheath with the intracranial cavity is cut off by pressure of the brain on the dural fold that surrounds the nerve at its entry into the canal In this way, the flow of lymph in the nerve is obstructed and a choked disk results

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* This work was done with the assistance of Dr George M Waldeck in the laboratories of and with material furnished by Parke Davis & Co

* Chairman s address, read before the Section on Ophthalmology at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

[1] Von Graefe Arch f Ophth 1860 vii 58

[2] Schwalbe Arch f Mikroscop Anat, 1869

[3] Schmidt Rimpler Arch f Augenh 1888

[4] Manz Deutsch Arch f klin Med 1871 ix 339

Behr[5] assumes that in addition to compression of the nerve in its foramen, the lymph stasis that results compresses the vein in the nerve, and this produces the venous congestion and engorgement of the fundus

Henderson[6] suggests that choked disk is due to the difference between the pathologically raised intravenous tension and the normal intra-ocular tension

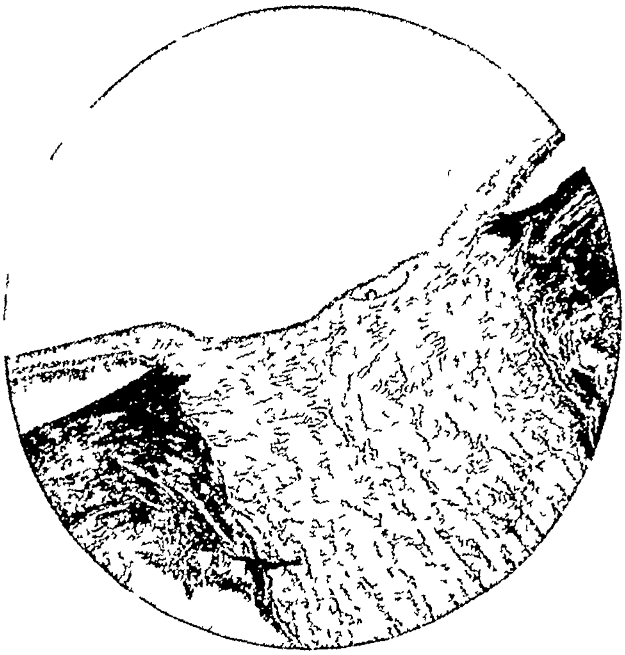

Fig 1—Photomicrograph of optic nerve of dog Normal

Levinsohn[7] has attempted to prove experimentally that an obstruction to the flow of the lymph in the intravaginal space compresses those lymph passages which run in the optic nerve, and that engorgement of the fluid coming from the vitreous chamber into the distal section of the optic nerve is produced in this way

Schieck[8] maintains that the increased sheath pressure obstructs the lymph drainage along the central vessels, producing edema and swelling of the disk, and by pressure on the central vessels a secondary venous engorgement

Parinaud[9] adhered to the mechanical theory and claimed that choked disk is present in cases of brain tumor only when the latter is complicated by hydrocephalus and edema of the brain, while Kreuchman thinks that in addition to increased pressure, the papilledema is produced by an autogenous substance set free by the destruction of the tumor cells On the other hand, Hughlings Jackson thought that a tumor of the brain acted to a certain degree as a foreign body and excited optic neuritis by its irritating influence, and Gowers thought that it was produced through products of inflammation

While most observers believe the mechanical theory plays an important part in the causation of choked disk, many are inclined to take the middle ground and believe that no one theory can explain all the clinical facts This theory is well expressed by Paton and Holmes[10] They believe the edema of the papilla that constitutes tumor papilledema is in the first place due to the venous engorgement that results from the rise of intravenous pressure that is necessary in order that circulation should be maintained in the intravaginal portion of the vein where this is subjected to an increased sheath pressure The increased sheath pressure is also the origin of the second factor, the obstruction of the lymph drainage from the papilla

Cushing and Bordley believe that the changes are due, first, to mechanical, and second, to toxic or inflammatory causes

De Schweinitz says

> In general terms, it is probable that choked disk is produced by a combination of factors In this combination increased intracranial tension or pressure is most prominent, and the mechanical theory of its pathogenesis affords the *most satisfactory explanation*

EXPERIMENTAL

The results obtained from experimentally produced intracranial pressure are as varied as the theories of the causation of papilledema in cases of brain tumor

Levinsohn injected fluid into the subdural or subarachnoid space and observed a slight stasis in the anterior segment of the nerve, with venous hyperemia and retinal hemorrhages He claimed the fluid never found its way along the axial trunk, even with greatly increased pressure

Manz conducted a series of experiments on animals to determine the effect of increased intracranial pressure on the vaginal distention Injection into the subdural space passed into and distended the sheath, and caused fulness of the retinal veins, and in some cases transient redness and swelling of the papilla

Schieck concluded from the results obtained from his experiments that choked disk could not be caused in monkeys by placing tents in the skull, that the injection of paraffin did not cause choked disk, but when normal saline solution was injected under pressure choked disk developed He concluded that mere rise of pressure within the skull could not cause choked disk, there must be an increased secretion of the cerebrospinal fluid

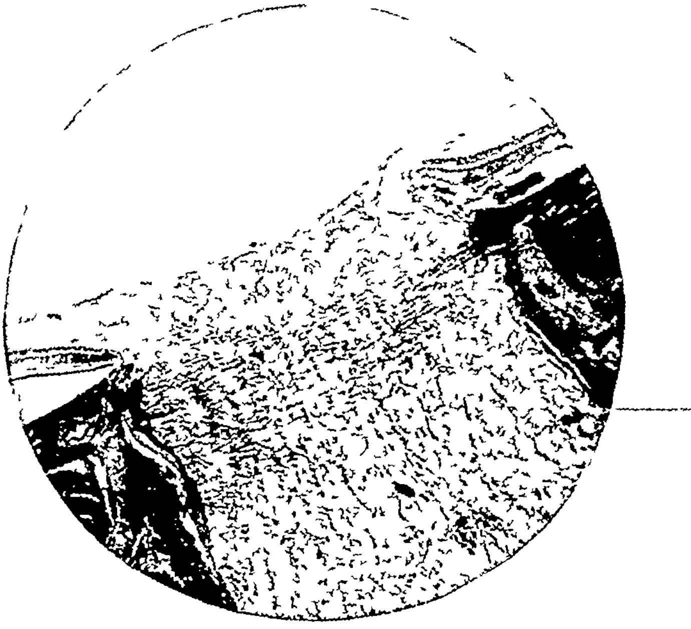

Fig 2—Photomicrograph of the optic nerve of untrephined eye of dog showing choked disk Intracranial pressure produced by digital pressure

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5 Behr Neurol Centralbl 1911, xxx, 66
6 Henderson Glaucoma 1910, p 216
7 Levinsohn Ber d Ophth Gesellsch Heidelberg 1911
8 Schieck Ber d Ophth Gesellsch, Heidelberg 1910
9 Parinaud Ann d ocul, 1879, xxxii 5
10 Paton and Holmes Brain xxxiii 427

Schmidt[11] found that a colored liquid injected into the sheath passed into the lymph space in the nerve at the lamina cribrosa, and he suggested that neuritis is produced not by the simple pressure outside the nerve, but by the influence, perhaps irritation, of the liquid passing into the lymph spaces

Cushing and Bordley induced artificial intracranial pressure by the introduction of normal salt solution in the subarachnoid space, by direct digital pressure on the dura, and by the introduction of fragments of sponge tents between the bone and dura They concluded that a neuroretinal edema with marked elevation of the papilla may accompany conditions which raise the intracranial pressure, whether from the introduction of a new fluid under tension, or from transmission of tension to the fluid already present

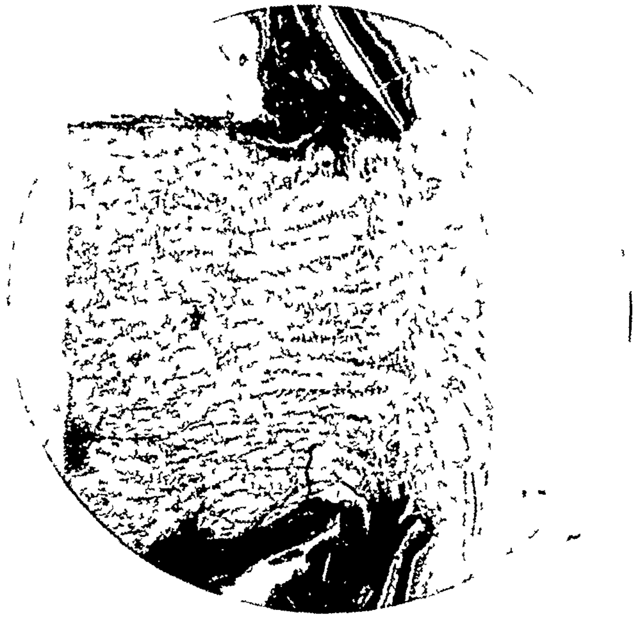

Fig 3 —Photomicrograph of the optic nerve of trephined eye of dog showing choked disk Intracranial pressure produced by digital pressure

It will thus be seen that the whole subject of the etiology of choked disk, like the origin and ultimate disposition of the cerebrospinal fluid, is somewhat chaotic

With a view of determining the effect that a difference in tension in the two eyes might have on the initial appearance, or amount of choked disk in cases of increased intracranial pressure, the following experiments were conducted

The tension in one eye was diminished by performing the sclerocorneal trephining operation of Elliot After recovery from the operation the intracranial pressure was increased and the effect on the two eyes observed

The experiments were conducted on dogs and monkeys, twenty of the former and three of the latter being employed

The details of the experiments were as follows

The refraction of each eye was determined with the ophthalmoscope and the tension taken with a Schiotz tonometer The intra-ocular tension of one eye was reduced by the trephining operation After recovery from the effects of the operation a second ophthalmoscopic examination was made and again the tension recorded Artificial intracranial pressure was induced (1) by the use of direct digital pressure, (2) by the injection of normal salt solution under registered pressure, (3) by the distention under registered pressure of an air bag introduced between the skull and dura, (4) by the injection of paraffin through a brass cannula screwed into the skull and perforated with an opening made to fit the tip of the paraffin syringe, (5) by the introduction of sea tangle tents between the bone and dura, and (6) by the introduction of sponge tents between the skull and dura

The results will be reported in groups arranged according to material employed to produce the intracranial pressure

GROUP I —DIGITAL PRESSURE

Digital pressure was made on the dura through a trephine opening Three dogs were experimented on In one dog, the disk in each eye was reported markedly swollen, but as the animal died before I had an opportunity to make an ophthalmoscopic examination, the result is not included in this report In the second experiment the dog died before any marked swelling had developed In the third experiment the results were definite and I shall report them in detail

A black spaniel dog, weighing 12 kg, was put under chlorbutanol anesthesia Estimated refraction + 1 00 D each eye, tension 18 mm Hg Left eye was trephined and tension reduced so low that with the 5 mg weight the indicator on the tonometer remained to the right of the scale Here, as in all subsequent experiments, this condition is indicated as Tn —negative A ¾ inch disk was removed from the right side of the skull well back, and digital pressure applied

At the end of five minutes' time the disk in the right eye was swollen 1 D and in the left, the trephined eye, 7 D with tremendous engorgement of the veins At the end of fifteen minutes right eye was swollen 4 D left eye 8 D On release of pressure for thirty-five minutes the edema subsided to right eye 0 left eye 3 D Fifteen minutes after the pressure was reapplied the edema increased in right eye to 3 D, left eye 7 D (O D, Fig 1, O S Fig 2)

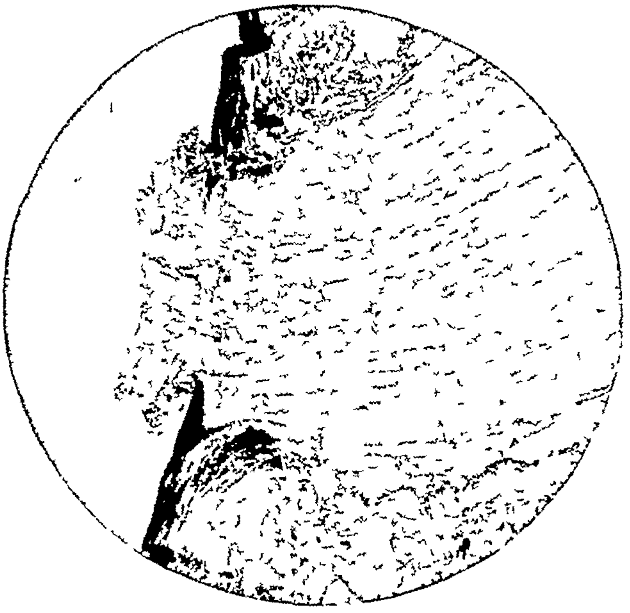

Fig 4 —Photomicrograph of optic nerve of dog showing choked disk after intracranial injection of saline solution

GROUP II —A SALINE SOLUTION

A saline solution under registered pressure was injected through the trephine opening after the dura and arachnoid had been divided

The tension in the left eye was made negative by a sclerocorneal trephining operation At a pressure of 30 mm of mercury the right disk was swollen 2 D the left 3 D At 55 mm pressure each eye was swollen 6 D At a pressure of 80 mm an exophthalmos developed in the right eye and,

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11 Schmidt in Gowers Ophthalmoscopy p 76

at the same time, a tremendous edema of the nerve and retina in the left eye, but no proptosis appeared At a pressure of 110 mm the dog died There was practically no difference in the amount of swelling in either eye at any stage of the experiment

Note I am unable to explain the difference in the appearance of the two eyes unless the lack of resistance in the trephined eye permitted the fluid to escape into the globe whereas in the eye with normal tension the excessive engorgement in the sheath and veins led to the proptosis

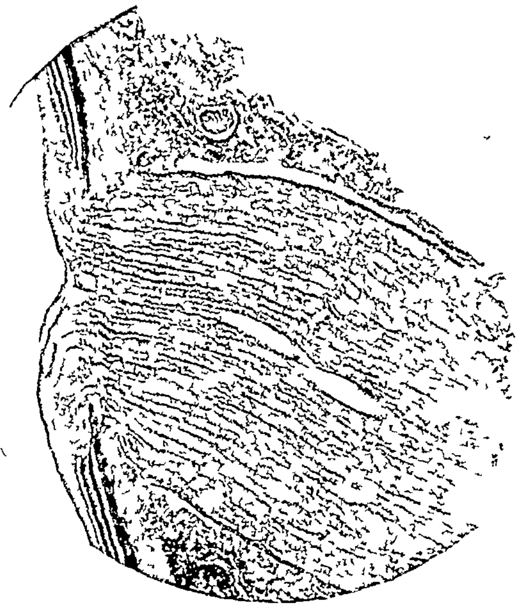

Fig 5—Photomicrograph of optic nerve of untrephined eye of monkey Intracranial pressure produced by sponge tent

GROUP III—AIR BAG

Pressure was made by means of an air bag attached to the end of a tube which closely fitted the trephine opening and the pressure applied under control by the means of a mercury manometer

Three experiments were made under chlorbutanol anesthesia The refraction was + 5 00 in Dog 1, + 7 00 in Dog 2, and + 8 00 in Dog 3 The tension was right eye 15, left eye 18 mm in Dog 1, 15 mm in each eye in Dog 2, and not taken in Dog 3 In two instances the tension was reduced in the right eye by passing a suture through the cornea into the anterior chamber

In the first case, under a pressure of 20 mm, both disks became engorged, this condition appearing first in the right or trephined eye Under a pressure of 60 mm the disk in the trephined eye was swollen 6 D and in the left 2 D Under a pressure of 90 mm the swelling in both disks increased to 7 D, and at a pressure of 280 mm when the dog died, the swelling did not increase above 8, and was equal in the two eyes

Note—The resistance at the disk is apparently increased with the amount of edema, the amount of the swelling being limited to about 8 D While this maximum amount of swelling is reached more quickly in the eye with diminished tension it does not go above a certain amount This result corresponds to clinical observations

Dog 2 died from too much chloretone

In Dog 3 control, tension was not reduced in either eye At a pressure of 10 mm Hg the veins showed slight engorgement in both eyes, at 65 mm both nerve heads became edematous No measurable swelling appeared at 90 or 200 mm pressure at which pressure the dog died Result, failure to produce choked disk

GROUP IV—SEA TANGLE TENT

Six experiments were made As the early work was undertaken to develop our technic, neither eye was trephined in the first five cases One dog died fifteen hours after the tent was introduced without reexamination Two dogs died on the third day One showed edema of both nerves, and the other a swelling of 1 D in the right and 2 D in the left disk The fourth dog lived twelve days when examination showed a swelling of 1 D in the right disk and 2 D in the left The fifth dog on the seventh day showed a swelling of 2 D in the right disk, and 3 D in the left

The right eye was trephined in the sixth dog, and two pieces of sea tangle tent were introduced under the skull in the left occipitoparietal region On the second day the disk in the trephined eye showed a swelling of 6 D and in the left eye 3 D Dog died same day Postmortem examination revealed severe injury to the brain and its membranes with marked evidence of hemorrhage

Note—The sea tangle tent is harder and does not expand to the same degree as the sponge tent

GROUP V—PARAFFIN

Paraffin was injected through the cannula screwed into a trephine opening in the skull The opening through the cannula contained a thread which corresponded to that on the tip of the syringe, so the melted paraffin could be forced directly into the brain cavity Three tests in all were made, without opening the dura The quantity of paraffin used varied from 3 85 to 4 42 c c

In each experiment the left eye was trephined and the tension made negative The paraffin was injected on the opposite side well back (that is, in reference to the trephined eye the tumor was contralateral) In the first instance in which 4 42 c c of paraffin were injected, the edema manifested itself almost immediately in the trephined eye, and not until this disk was choked 2 D did the edema appear in the right eye Later the venous engorgement in both eyes was intense and the edema extended to the retina Dog died within twenty-four hours Evidently too large a quantity of paraffin had been used

In the second case, 3 85 c c of paraffin were injected On the following day the right disk was edematous but not swollen

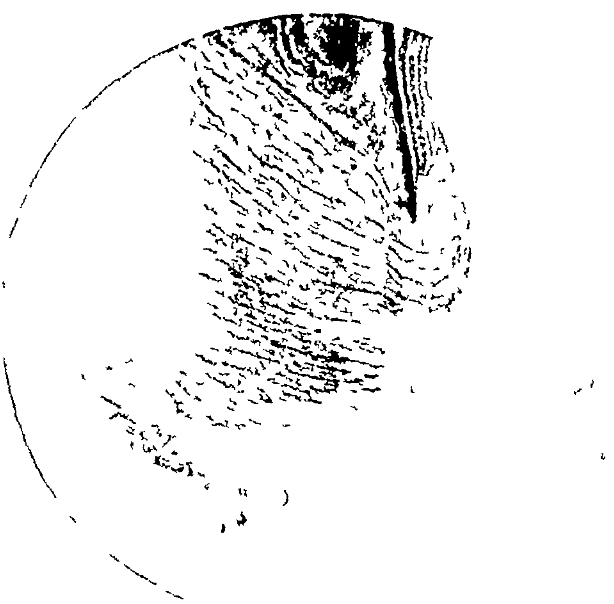

Fig 6—Photomicrograph of op
Intracranial pressure produced

while the left showed a sw
right eye was swollen 1 D
right eye no swelling left
day

In the third case, 3 85
third day the right disk s
able swelling, while the l
swollen 3 D Dog died

On the whole, the paraffin was unsatisfactory The edema of the disk was never greater than 3 D and subsided in a few days

GROUP VI—SPONGE TENTS

Four observations were made The tension was reduced in one eye in three instances One was run as a control, the tension being normal in both eyes The tension in the right eye was reduced in the first dog and that in the left eye in the other two dogs In each instance the tent was inserted on the side opposite the eye with least tension

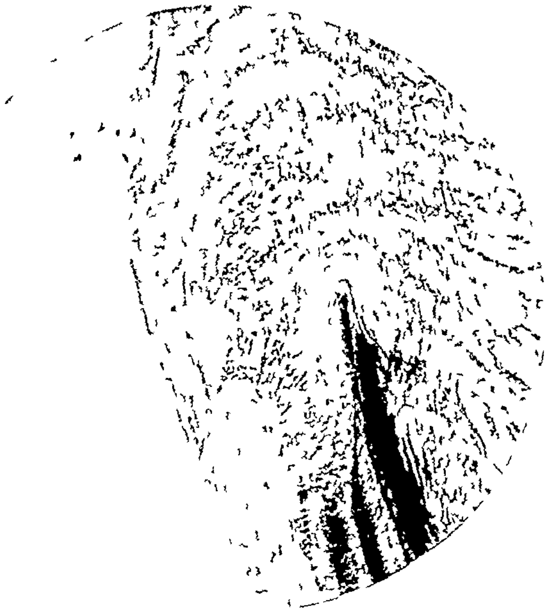

Fig 7—Photomicrograph showing hemorrhage in nerve shown in Figure 4

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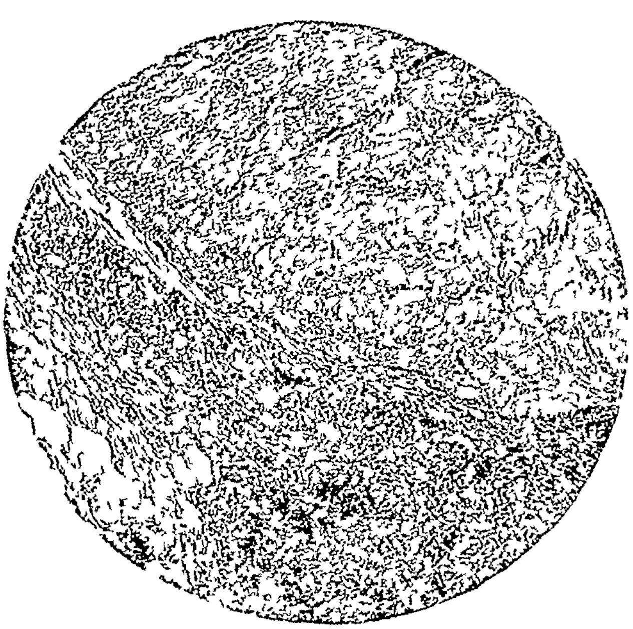

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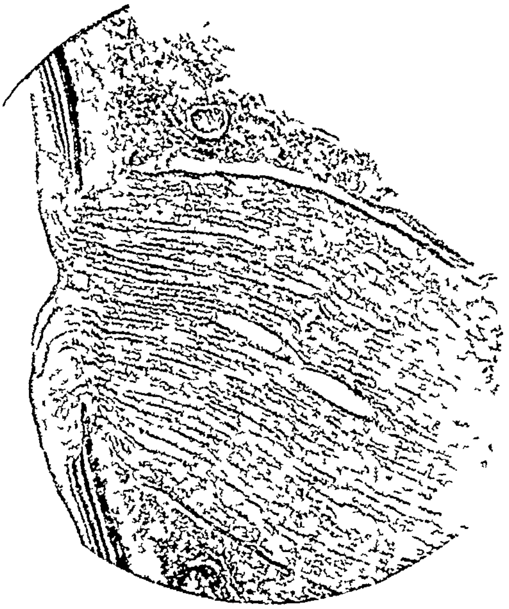

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GROUP III—AIR BAG

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Three experiments were made under chlorbutanol anesthesia The refraction was + 5 00 in Dog 1, + 7 00 in Dog 2 and + 8 00 in Dog 3 The tension was right eye 15, left eye 18 mm in Dog 1 15 mm in each eye in Dog 2, and not taken in Dog 3 In two instances the tension was reduced in the right eye by passing a suture through the cornea into the anterior chamber

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Note—The resistance at the disk is apparently increased with the amount of edema the amount of the swelling being limited to about 8 D While this maximum amount of swelling is reached more quickly in the eye with diminished tension, it does not go above a certain amount This result corresponds to clinical observations

Dog 2 died from too much chloretone

In Dog 3 control, tension was not reduced in either eye At a pressure of 10 mm Hg the veins showed slight engorgement in both eyes, at 65 mm both nerve heads became edematous No measurable swelling appeared at 90 or 200 mm pressure, at which pressure the dog died Result, failure to produce choked disk

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Paraffin was injected through the cannula screwed into a trephine opening in the skull The opening through the cannula contained a thread which corresponded to that on the tip of the syringe so the melted paraffin could be forced directly into the brain cavity Three tests in all were made, without opening the dura The quantity of paraffin used varied from 3 85 to 4 42 c c

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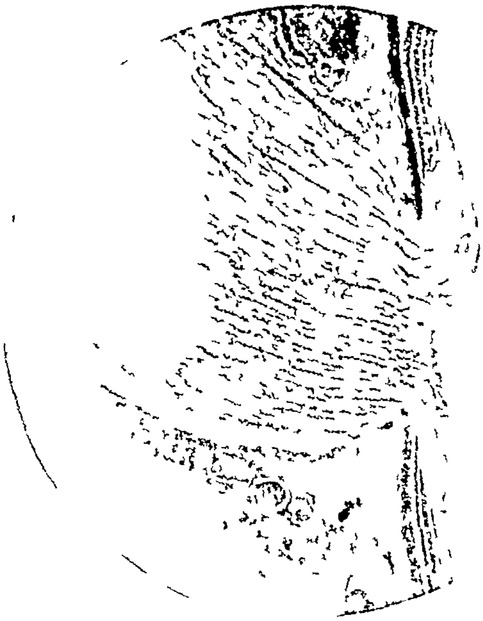

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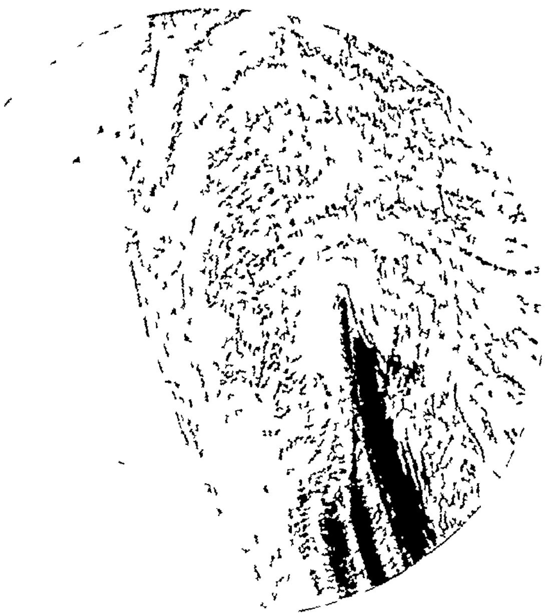

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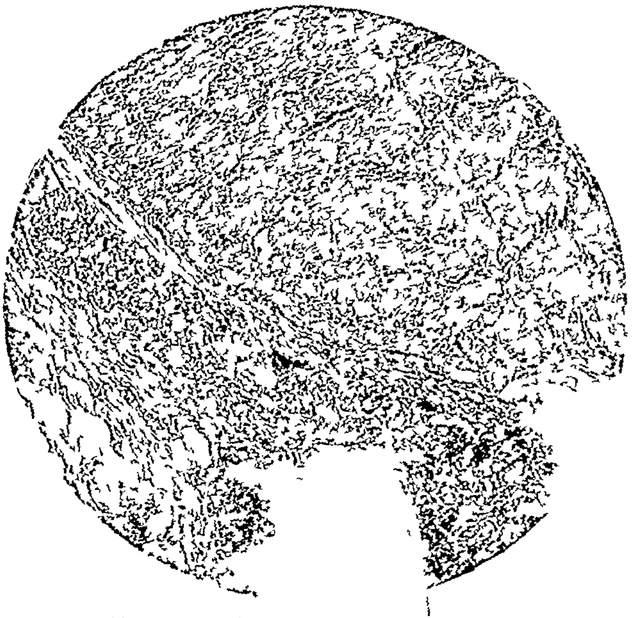

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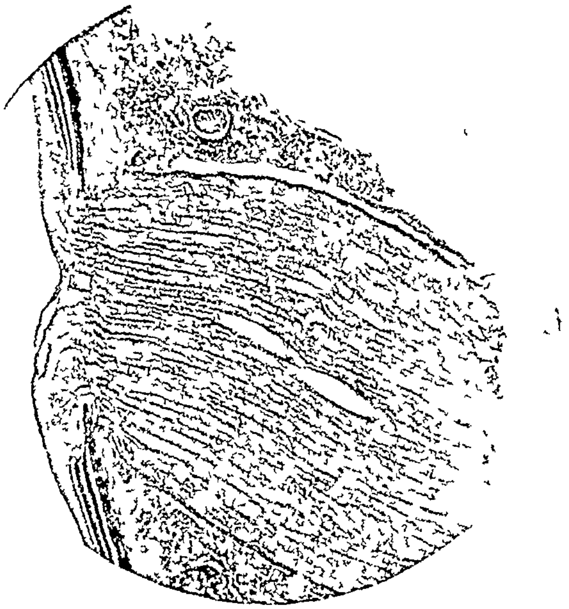

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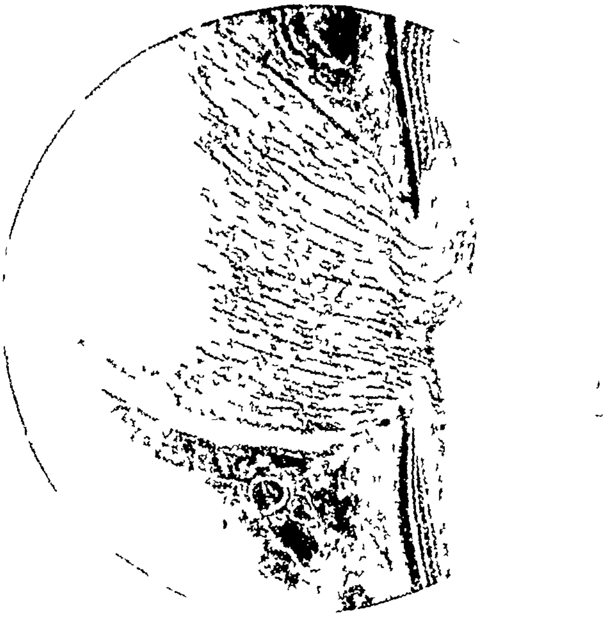

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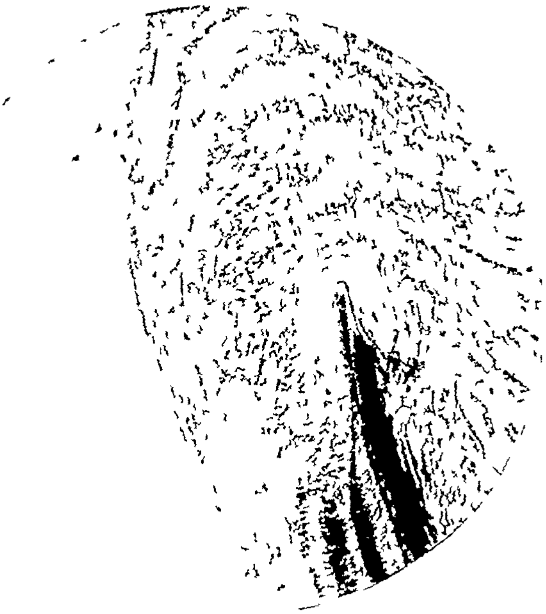

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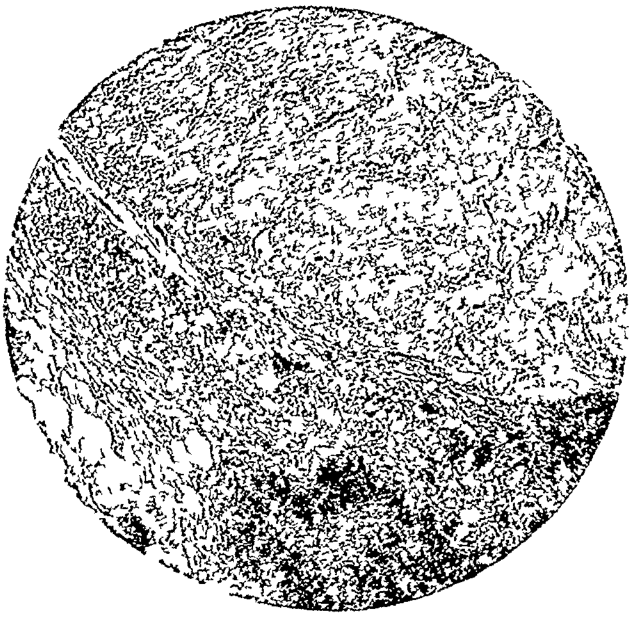

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MONKEY EXPERIMENT 3 — Large Brazilian monkey Estimated refraction S + 2 00 in each eye Tension in each eye 21 Left eye trephined under chloroform anesthesia, a large cone of sponge tent 23 mm high and 9 mm diameter at the base was introduced between the bone and dura in the right parietal region On the second day the disk in the right eye was edematous, tension 21 mm Disk in the left eye swollen 2 D, tension 2 mm On the third day, the right disk was swollen 1 D, tension 20, left 2 D, tension 10 mm On the fourth day right disk was swollen 2 D left 5 D Monkey died on fourth day (O D, Fig 3, O S, Fig 4)

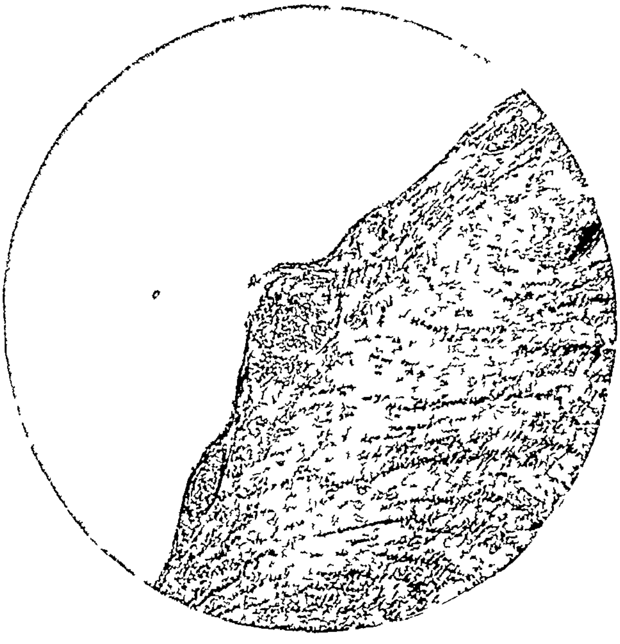

Fig 9 —Photomicrograph showing marked venous engorgement in eye of dog Intracranial pressure produced by sponge tent

In each experiment the intracranial pressure was made on the side opposite the eye in which the tension had been reduced In not a single instance did the choked disk appear first on the side of the tumor but always in the eye with the least tension

The results obtained in the dog and monkey being identical cannot, in view of the difference of the venous circulation in the two animals, but suggest the possibility that the return blood flow may not be as important a factor in the causation of choked disk as we now believe it to be

CONCLUSIONS

1 Choked disk can be produced in the dog and monkey by artificially increasing the intracranial pressure The most satisfactory results are obtained by the use of sponge tents

2 When the intracranial pressure is increased by artificial tumors placed in the occipitoparietal region, one element in determining which disk will be affected first is the tension of the eyeball

3 When the intracranial pressure is increased by artificial tumors placed in the occipitoparietal region, the nerve in the eye of least tension is the first to show the choked disk

4 When the intracranial pressure is increased by artificial tumors placed in the occipitoparietal region, there is no direct relation between the location of the tumors and the eye first affected

1025 David Whitney Building

ABSTRACT OF DISCUSSION

DR JAMES BORDLEY, Baltimore It has always been believed that some anatomic reason accounted for one eye swelling before or more than the other It has also been clearly understood that as a diagnostic point in the localization of brain tumors we could not go to the eye in which there was the greatest swelling The tumor is not always located on the side of the greater choked disk I have studied twelve cases I have found that where the ocular tension was equal, the side of the tumor was the side of the first swelling Where there was a difference in the intra-ocular tension the side of the first swelling was the side of the least intra-ocular tension This corresponds with what Dr Parker found experimentally In this group of cases we had one case of glaucoma It was a one-sided glaucoma and the glaucomatous side never developed a choked disk Of course, in considering the greatest height at the time of the examination we must also consider the condition of the choked disk, because if we examine a case in the late stages where changes have taken place in the optic nerve, it is quite possible that the side of the eye with the least tension may be the side with the greatest choked disk, because pathologic changes have taken place in the eye which have changed the condition of things

DR JOHN E WEEKS, New York It has been held in years gone by that inflammatory processes were accountable for choked disk in some degree in all cases, and in some cases entirely so Microscopic examination in five cases led me to conclude that a true inflammation was seldom the cause of choked disk, but that it must be due to a mechanical process, such as intracranial tension I compiled a large number of cases observed by men in different parts of the world in regard to the difference in the degree of choked disk in the two eyes As we all know, a great deal of speculation has been indulged in as to whether the increase in tension or increase in swelling in one eye was in any way indicative of the side on which the tumor was located The statistics that I was able to get together showed that no dependence could be placed on that particular sign Dr Parker's work explains in a large degree the reason why one eye presents papilledema more than the other, namely, a difference in the intra-ocular tension

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Metabolism of the Milch Cow—Liberal milk production, on common practical winter rations fed in quantities sufficient to maintain the live weight and to cause regular nitrogen and sulphur storage, caused consistent losses of calcium, magnesium and phosphorus from the cows' skeletons These losses occurred in spite of liberal supplies of these nutrients in the food The limited response of the cows to increase in the intake of these elements showed that their utilization of these nutrients, on a profitable plane of food consumption and milk production, was surprisingly inefficient—Forbes and Beegle *Bull Ohio Agricultur Exper Sta*, April, 1916

REPORT OF FIVE CASES OF TERTIAN MALARIA TREATED WITH DIARSENOL INTRAVENOUSLY *

FRANK C NEFF, M D
KANSAS CITY, MO

Since 1911 various writers have published reports of the use of synthetic arsenical preparations in the different forms of malaria, which was attended usually by satisfactory results in the tertian type, but proved of little value in other types of infections Only a few children so treated have been reported, and the writer wishes to add the brief observation of five children in the Kansas City General Hospital

Case 1—Mrs T and her three children were admitted to the hospital on March 15, 1916 The oldest child Gertie T aged 11, had been ill since June, 1915, infected during residence in Oklahoma Had chills on every third day and had had quinin treatment without permanent results On admission to the hospital on March 15, spleen was found greatly enlarged reaching half way to the pelvis A thin smear of the blood showed tertian plasmodia, about one to every eight or ten fields, mostly half-grown parasites On March 22 0 2 gm of diarsenol was given intravenously No further chills or fever occurred thereafter for twenty-three days By palpation and radiographs the spleen showed definite reduction in size and no organisms were found in thick smears of the peripheral blood On March 29, 0 25 gm diarsenol was given because of the previous small dose administered Neither injection caused reaction On April 15, organisms were found in the smear and on April 18 0 4 gm diarsenol was given Since that time the child has gained in weight, has been symptom free, the blood sterile, though spleen is still palpable below the costal border

Case 2—Jessie T, aged 9 years, sister of the preceding patient, received her infection at the same time, June, 1915, at first had attacks about every fifteen days, later chills appeared every other day Coming under our observation, March 15, child appeared well nourished, hemoglobin 80 spleen two fingers below ribs, recently had had quinin treatment No organisms were found in thin smears, temperature was normal for five days preceding administration of diarsenol, 0 15 gm on March 22, and a second dose of 0 2 gm on March 29 Child has remained afebrile and the blood sterile until the present date June 3, 1916 This patient had been actively malarial until entering the hospital, but has showed no symptoms except the enlarged spleen since then The spleen has receded, but not entirely disappeared

Case 3—Josie T, aged 5, sister of the preceding patients, had had attacks every week since infection in the summer of 1915, with chills every other day No results from quinin treatment On examination, spleen tender and reaching to brim of the pelvis Chills occurred every other day until March 22, when diarsenol, 0 1 gm, was administered, when no more chills occurred, a second dose of 0 15 gm was given on March 29 Spleen became diminished in size Symptoms absent thereafter until April 14, when fever and headache and organisms appeared April 18, 0.2 gm diarsenol was given with immediate subsidence of all symptoms The peripheral blood was sterile six weeks later, the spleen reduced in size but still markedly large

Case 4—Maggie W, aged 10 one of five actively malarial sisters entered the hospital April 15, 1916, suffering since June, 1915 with fever and chills on alternate days with relapses in spite of quinin treatment Spleen markedly enlarged, blood contained numerous adult tertian parasites temperature every third day slightly above normal, diarsenol 0 3 gm, was given on April 18, with subsidence of temperature, peripheral blood sterile until May 6 when organisms were again found in the blood No further opportunity was given for treatment, as family left the city

Case 5—Beatrice W, aged 7 years, sister of the preceding patient, also has been infected since summer of 1915, has had chills, fever and enlarged spleen ever since This child had tertian parasites on admission to hospital April 15 1916 spleen about twice the normal size April 16 and 18 temperature rose to 104 5, accompanied by chills Diarsenol, 0 2 gm, was given on April 18, with no further symptoms The peripheral blood became sterile and patient left hospital May 6, spleen could be felt two fingers below ribs, malarial organisms abundant, temperature 101 As all members of the family were infected and had become indifferent to the disease, they would not give consent to remove the children to the hospital for further treatment

That there is room for improvement in the treatment of malaria is evident when one observes how resistant the disease often is to permanent cure by the universally administered quinin Disappearance of chills and fever is frequently taken as evidence of a cure If the patient feels well he will probably not return for treatment or observation

A remedy that will cause not only an immediate disappearance of symptoms, but will sterilize the entire blood stream, reduce permanently the size of the spleen to the normal and reach what has been described as the blocked capillaries of the spleen and other internal organs and the bone marrow, will be of the greatest benefit From the efforts of great numbers of clinicians to find such a drug, it is doubtful if many men experienced in the treatment of long-standing malarial infection believe that quinin alone can do this Barlow[1] has recently summarized this prevalent opinion

Soon after the discovery of salvarsan and neosalvarsan, experiments were begun with their employment in malaria, based on the fact of the common protozoal nature of the malarial and syphilitic organisms, the arsenobenzol preparations being germicidal for both [2]

Among the cases reported in the literature in which observation has been extended over a sufficient length of time to be conclusive is one by Captain Reasoner[3] of the army who reported a subtertian malarial infection lasting twelve years, during which symptoms were present every month and quinin had been routinely administered Following the administration of 0 4 gm salvarsan the patient gained 8 pounds in weight within thirty days and there was no return of the malarial symptoms during subsequent observations Goldthwaite[4] reported one case which did not yield to intramuscular injections of quinin which promptly recovered following one injection of salvarsan Reed[5] had one patient who had had three relapses under quinin treatment, but remained cured at the end of a year following a single dose of salvarsan Baermann[6] reports four patients with tertian malaria treated with salvarsan who were free of the organisms at the end of two months Werner[7] and Iversen and Tuschinsky[8] observed similar results from neosalvarsan to those observed with the older preparation of arsenic when used in corresponding doses

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* Diarsenol is the Canadian preparation of salvarsan

* Read before the Section on Diseases of Children at the Sixty Seventh Annual Session of the American Medical Association Detroit June, 1916

[1] Barlow Am Jour Trop Dis May, 1916 p 581

[2] Sheard Charles Jr London Ont Canad Pract and Review 1913 xxxviii 591

[3] Reasoner The Military Surgeon 1912 xxix 294

[4] Goldthwaite Lieut R H Salvarsan and Malaria Mil Surgeon 1912 xxxi 455

[5] Reed E U U S Nav Med Bull 1913 vii 255

[6] Baermann Experimental Use of Salvarsan in Malaria Munchen med. Wchnschr 1916 lxi 1

[7] Werner Ueber Neosalvarsan bei Malaria Deutsch med Wchnschr 1912 xliv 2068

[8] Iversen and Tuschinsky Munchen med Wchnschr 1912 xxix 16

COMMENT

Two of the author's patients received only one injection of the drug This was insufficient, as organisms again appeared at the end of three weeks In the 10-year-old child one dose of 0 3 gm was given and in the 7-year-old 0 2 gm was given No opportunity was permitted for further treatment, as the parents refused to bring the children back to the hospital

Three of the patients received from two to four injections and at one interval of three weeks organisms were again found in two children, following which the only large dose was given These three children have since gained markedly in weight and have been continuously well On June 3, 1916, at the last observation, the children were still free of organisms, six weeks following the last dose of the drug All these patients had had quinin for eight months before entering the hospital No quinin was given thereafter The spleens have never reached normal size, but have become from one half to two thirds smaller Because of the still definitely enlarged spleens, we do not feel that the patients can be said to be permanently cured

Only one preparation of arsenic, diarsenol, was used, as at the time we were unable to obtain salvarsan The dosage was probably too small, but we hesitated to employ larger doses because of the possibility of toxicity from their use However, no reactions occurred nor any manifestation which would contraindicate the employment of such a remedy Whether our patients would have done better on salvarsan or neosalvarsan is impossible to say

From such a limited number of cases and a short period of observation, one cannot draw any conclusions as to the permanent curability of chronic malaria with diarsenol Against its use in children with malaria is the somewhat greater immediate cost, the technical difficulties of administration, the fear of untoward effects, the apparent necessity for repeated doses, and in our cases, the persistence of an enlarged spleen in spite of such doses as we used In its favor are the rapid cessation of general symptoms, the sterilization of the peripheral blood, the marked gain in weight and in health There is a necessity for a remedy which is a parasiticide for strains of malarial organisms that are quinin fast or are not accessible to quinin What might be accomplished with larger doses over a longer period of time, using quinin as an adjuvant, would be of interest in these cases

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The Health of Workingmen—The United States Bureau of Mines, which heretofore has been mainly interested in the reduction of deaths by accidents among men connected with the mine industries, has broadened its scope to include the health of the men and has issued a report on health conservation at steel mills This report contains advice of direct value to every laborer and employer of labor in the United States The efficiency of the workmen is a subject which no operator can afford to ignore The prevention of conditions productive of ill health is a plain business proposition The workingman has a right to demand that he be not required to work beside men who are physically or mentally diseased Medical supervision is necessary in order to prevent the introduction and spread of infectious or contagious diseases Such supervision will also show defects of which employees are unaware Large corporations should employ a full-time physician who should devote his entire attention to the study of efficiency problems By care along these lines the average loss of time due to illness among 30,000,000 workers in the United States, estimated at nine days a year, or a loss of nearly $880 000 000, may be materially decreased

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BRONCHIECTASIS OF THE UPPER LOBES

WITH REPORT OF FIVE CASES WITH NECROPSIES *

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AND
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From etiology to treatment, the various problems which arise in connection with bronchiectasis are often a cause of difficulty There are numerous theories as to its etiology, while as concerns the diagnosis, the figures of occurrence suggest that it is recognized twenty times more frequently by the pathologist than by the clinician The difficulties of diagnosis are increased by the frequent association of bronchiectasis with conditions which may obscure, modify or conceal its features But notwithstanding this, we should recognize bronchiectasis more often than we do

SITE OF BRONCHIECTASIS

The older writers believed that the apex was the commonest site, but many modern authorities consider this erroneous and due to an imperfect differentiation of tuberculous and bronchiectatic lesions Lebert, in a series of fifty-two cases, found unilateral upper lobe involvement in only 11 per cent King found among the nontuberculous bronchiectases 33 per cent unilateral and 67 per cent bilateral, and among the tuberculous bronchiectases 46 per cent unilateral and 54 per cent bilateral These figures indicate that while the tendency is to a bilateral involvement, the tuberculous cases show a greater number of unilateral cases He found also that unilateral lesions were much more frequent on the right side than on the left Of our unilateral cases, one was on the right and the other on the left side King found that for all types of bronchiectasis, tuberculous and nontuberculous, unilateral and bilateral, there is a marked preponderance of cases involving all the lobes of one lung except in tuberculous unilateral cases, in which he found no example of whole lung involvement This is interesting in connection with our Case 3, in which unilateral involvement of the entire left lung was noted When a single lobe was involved it occurred in the upper lobe only in a small percentage of cases of pure bronchiectasis, and in a somewhat greater percentage in the tuberculous cases In other words, according to King, lower lobe involvement predominates strikingly in all types of cases, though to a less marked degree in tuberculous bronchiectasis This is controverted by the necropsy figures of the Phipps Institute, Philadelphia, in which upper lobe involvement predominates in tuberculous cases Our experience leads us to believe that while lower lobe involvement predominates in nontuberculous bronchiectasis, nevertheless, in tuberculous cases, upper lobe involvement is not infrequent

The five cases here reported are unusual in the distribution of the bronchiectasis They came to necropsy within a period of five months, and represent the only instances of bronchiectasis in eighty consecutive necropsies from the service of the Department for Diseases of the Chest of the Jefferson Medical College

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* Read before the Section on Practice of Medicine at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

Bronchiectasis involving the upper lobes alone is not common, and only slight reference to it is found in literature These cases illustrate particularly some of the problems of diagnosis

REPORT OF CASES

Case 1—*Extensive bronchiectasis with fibrosis limited to and involving the right upper lobe Confusion with pulmonary tuberculosis Differentiation Death due to lobar pneumonia*

H D, No E 4437 man, white machinist, aged 62, was admitted March 30 1915, and died Dec 10, 1915 His past history was negative There was no history of syphilis During the last ten years he had suffered with a "winter cough"

Present Illness—This dated to one year before, when he had a severe attack of bronchitis which occurred in the middle of winter and gradually subsided in the summer, to recur during the winter prior to his coming under our observation Shortly after the onset he brought up 2 ounces of blood during a paroxysm of coughing The cough on admission was moderately severe and productive, during both the day and night, of a moderate amount of thick yellowish sputum He never had any pain in the chest, but dyspnea occurred quite constantly on exertion He had no chilliness, fever or night sweats His best weight was 220 pounds at the time of onset and the present weight 174 pounds Coincident with the loss of weight there had been a gradual diminution in strength

Physical Examination—He was fairly well nourished The chest showed some flattening of the upper right half anteriorly with slight drooping of the shoulder The superficial veins over the right upper chest and anterior surface of the right shoulder to the middle third of the arm were dilated and tortuous Expansion on the right side was distinctly limited The percussion note was dull anteriorly on the right side from the apex to the third rib and posteriorly to the fourth vertebral spine The breath sounds were generally harsh except over the area of dulness where, although their intensity was diminished there was a distinct tubular quality Vocal fremitus and resonance were increased, and sibilant and crackling rales were heard over the same area There was distinct clubbing of the fingers and, to a less extent, of the toes

The blood showed hemoglobin, 87 per cent, red cells 4 700 000, and leukocytes, 14 000 The differential counts gave polynuclears from 55 to 60 per cent and mononuclears 32 to 40 per cent The Wassermann test was negative The urine showed nothing of note, and the functional test gave 58 per cent of phenolsulphonephthalein excretion in two hours Repeated sputum examinations did not show tubercle bacilli The Roentgen-ray report (Dr Manges) was The right upper lobe shows a dense fibrous mass with possibly a cavity or a small amount of lung tissue left"

Progress—Immediately after admission to the hospital the patient began to improve The cough became less severe expectoration lessened, his weight increased (12 pounds in two months) and his strength returned so that he was able to be up during the entire day He had no elevation of temperature, except for occasional rises to 99 and 100 He was discharged on request and admitted to a sanatorium during the following summer months where the diagnosis of *advanced tuberculosis* was made He was readmitted under our care in the autumn considerably improved, afebrile, but still suffering from a distressing cough and considerable expectoration The physical examination was identical with that of previous admission It was our opinion that he suffered with a localized nontuberculous fibrosis of the right upper lobe with perhaps some bronchial dilatation giving rise to signs of cavity The opposite lung was clear He was feeling particularly well when an attack of lobar pneumonia with involvement of the left lung supervened from which he died in three days

Remarks—The principal reasons for excluding tuberculosis were the apparent freedom from involvement of the left lung in the presence of so well marked a lesion in the right upper lobe and the absence of tubercle bacilli in the sputum He had been in three sanatoriums, in each the diagnosis of advanced tuberculosis was made In one sanatorium no examination of the sputum was made

Necropsy (Dr Dry Only the relevant findings are reported in this and subsequent cases) —Lobar pneumonia of left lung The right pleura was thickened and densely adherent over the upper lobe only The upper right lobe showed marked fibrous change and cavities throughout due to multiple saccular dilatation of the bronchi No evidence of tuberculosis

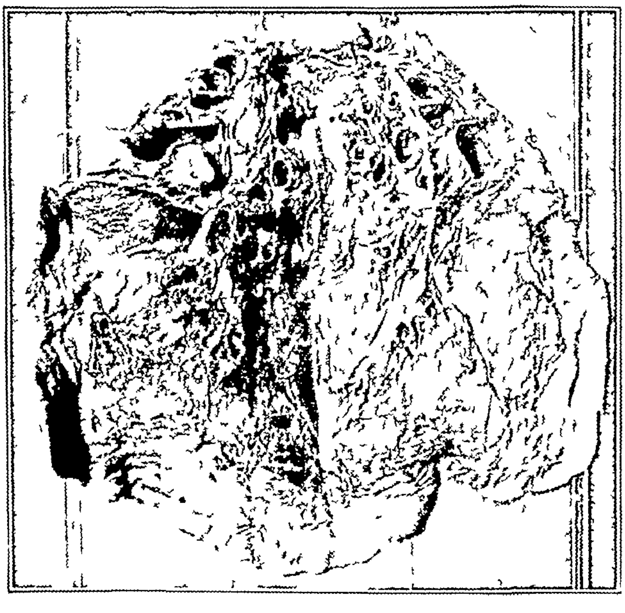

Fig 1 (Case 1) —Right lung cut open The sharp line of demarcation between the bronchiectatic upper lobe and the normal lung tissue of the lower lobe is the interlobar fissure The upper lobe has been converted into a series of cavities as a result of multiple saccular dilatations of the bronchial tubes Between the dilated bronchi the lung tissue is largely replaced by densely firm fibrous tissue Very little air containing pulmonary structure remains No gross evidence of pulmonary tuberculosis could be found The lower portions of the lung show passive congestion and slight edema The opposite lung shows the lobar pneumonia from which the patient died

Case 2—*Bronchiectasis involving the upper portions of both lungs associated with a chronic ulcerative tuberculosis of the same area with small cavities The bronchiectatic dilatations were in excess of the tuberculous cavities The impossibility of diagnosing bronchiectasis under these conditions*

L S, No D 5237 man, white, pedler, aged 58 was admitted May 27, 1914 and died Jan 24, 1916 The past history was negative He denied having had syphilis

Present Illness—Ten years ago he applied to a local hospital for treatment for 'bronchial trouble" characterized by a constant annoying cough with expectoration which at times was blood streaked Since then he had never been entirely free from cough except for very short intervals, usually in the summer months He had been a patient in various hospitals and sanatoriums with the diagnosis of tuberculosis At the time of admission to our care his cough was moderately severe and productive, especially at night, of a large amount of yellowish sputum Blood spitting occurred on numerous occasions, never amounting to more than streaked sputum and rarely lasting more than a day or two Hoarseness was present at various times The appetite had been fair, but digestion poor His best weight was 124 pounds at the time of onset ten years ago, his lowest weight 99 pounds six months ago, and present weight 104 pounds He had generally lost strength although feeling better at times, on admission he was quite weak

Physical Examination—He was poorly nourished and pale The thorax was somewhat rounded and emaciated The right side was smaller than the left and flattened anteriorly over the upper half The percussion note was hyperresonant over the entire chest anteriorly except below the right clavicle to the second rib, posteriorly resonance was impaired from the apexes to the spine of the scapulae on both sides and over the right base from the angle of the scapula downward The breath sounds were generally tubular throughout except below the fourth rib anteriorly, where they were bronchovesicular, and posteriorly below the angles of the scapulae, where they were distant, especially on the right side and corresponding to the area of dulness The breath sounds on the left side in the upper half were of a typical amphoric quality Abundant rales of all types were heard throughout the entire pulmonary area, with greatest predominance in the upper lobes, especially on the right side Vocal fremitus and resonance were quite distinct over the upper chest, especially in the right side and diminished at the right base The extremities did not show clubbing

The blood showed hemoglobin, 70 per cent, red cells, 4 400 000, leukocytes, 11 000 to 18 000 The polynuclear count varied from 64 to 76 per cent, and the mononuclears from 24 to 36 per cent Wassermann test was negative The urine had a low specific gravity with albumin and hyaline casts Phenolsulphonephthalein output varied from 29 to 40 per cent in two hours The sputum contained large numbers of tubercle bacilli

Temperature Record—Except for a few months, he was under constant observation from May, 1914 to January, 1916, when he died For the greater part of this time he was afebrile, except for an occasional week when he would have a slight afternoon rise in temperature for several hours, not exceeding 99 to 100, and still more rarely an acute 'flare up' to 101 or 102 for several afternoons The third hour temperature during the last month of life was rarely above normal, and during the last two weeks was subnormal with diurnal oscillations of 2 and 3 degrees The bedside chart stood in marked contrast with those of fellow patients manifesting the irregular fever so frequently found in advanced tuberculosis

Progress — The clinical course was one of progressive weakness until the final month of life, when he was generally confined to bed The cough was at all times distressing and productive Blood streaked sputum was frequent and transient in duration His death though not unexpected occurred rather suddenly

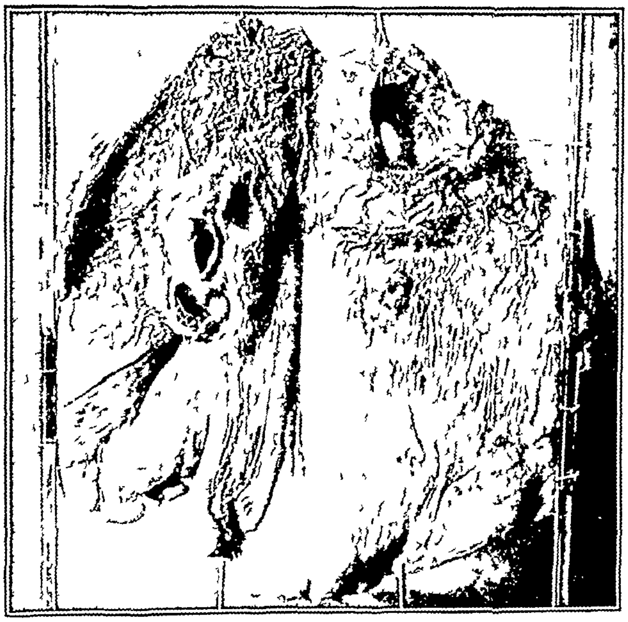

Fig 2 (Case 1) —External view of same lung as in Figure 1 In the upper portion is seen a trap door of tissue cut in the posterior wall of the largest saccular dilatation exposing to view the interior and the distal wall with the opening of the bronchus, therein The pleura over the upper lobe is thickened and was densely adherent causing some laceration of the lung tissue during removal The pleura over the lower lobe is smooth glistening and apparently normal

Necropsy (Dr Dry) —Marked thickened adherent pleura on both sides Cavities throughout the upper portions of both lungs with marked fibroid changes The bronchiectatic were in excess of the tuberculous cavities

Case 3—*Extensive bronchiectasis and tuberculosis limited to the left lung A large cavity in the upper lobe with saccular bronchiectasis of the upper and lower lobes The question at necropsy as to whether the large apical cavity was tuberculous or bronchiectatic decided only after a careful study by the pathologist Diagnosis of bronchiectasis suspected during life*

V D, No D 2425 woman white, mill-worker, aged 20, admitted Nov 6, 1913 died Feb 29, 1916 There was a family history of tuberculosis The previous history was negative

Present Illness—The onset was about two years ago with cough and weakness She was sent to a state sanatorium where she remained for six weeks She kept house until one year ago when she returned to work in a mill, where she continued until one month ago when she stopped because of cough and hemorrhages from the lung The cough of late had become more and more severe and productive of considerable yellowish white sputum which was often blood streaked The first hemorrhage amounted to a basinful" She had no pain, but there was dyspnea on exertion Chilliness and fever were frequent, and night sweats occurred every now and then Her best weight was 107 pounds three months ago, weight at present 72 pounds

Physical Examination—An ill nourished, emaciated, pallid young adult woman She had moderate dyspnea with slightly cyanotic lips The chest was flat and emaciated with accentuation of the bony prominences and depressions The respirations were rapid and shallow with general limitation, especially of the left side Bronchial fremitus was distinctly felt over the entire left lung Percussion revealed a slight quality of tympany on the right side anteriorly and posteriorly to the fourth thoracic spine, below which the note was impaired, on the left side dulness extended from the apex to the fourth rib anteriorly, and there was impaired resonance over the entire surface posteriorly, except from the second to the fourth rib where it approached tympany Breath sounds were loud and tubular over the entire pulmonary area, especially on the left side where from the clavicle to the third rib anteriorly and between the second and fourth spine posteriorly, they were distinctly amphoric Scattered rales of all types were found throughout the lung especially on the left side The extremities did not show clubbing

The blood showed hemoglobin, 65 to 70 per cent, red cells 5 400,000 to 4,300,000, leukocytes, 14,000 to 18 600 The polynuclears varied from 66 to 80 per cent and mononuclears 18 to 28 per cent The Wassermann test was negative The urine was clear The sputum contained tubercle bacilli

Progress—After staying in the hospital under observation for eight months the patient felt slightly better and was transferred to a sanatorium in the country The cough, expectoration and fever remained unchanged Hemoptysis was frequent usually in the form of blood-streaked sputum, but on several occasions it was so profuse as to be alarming The third hour temperature record showed constant afternoon elevations to from 101 to 103 with rapid pulse After the lapse of one year she returned in about the same condition, but physical examination showed that the left lung was more extensively involved and the right lung considerably improved We could not account for these changes in the physical signs, except that possibly many of the previous findings in the right lung were due to an associated nontuberculous process which had cleared We were at a loss to explain the signs of extensive involvement with cavity formation on the left side and so little involvement on the right side In the ward classes it was pointed out that "perhaps an associated unilateral bronchiectasis" was present The patient became weaker and had arthritis of the left knee in the last three months of life The hemoptyses, so frequent on the first admission, were entirely absent The temperature showed marked diurnal oscillations Death resulted from lobar pneumonia of the right lung on the second day of its course

Necropsy (Dr Dry) —Lobar pneumonia of the right lung which showed no signs of tuberculosis The pleura was thickened and adherent over the whole of the left side The upper lobe of the left lung showed a large cavity with a fibrous wall at the apex and numerous smaller cavities due to bronchiectasis At necropsy it was not possible to say whether the large cavity was tuberculous or bronchiectatic The subsequent studies in the pathologic department by Dr Coplin established its tuberculous nature Throughout the remainder of the upper lobe and through the lower lobe there was a diffuse, saccular and cylindric bronchiectasis The lung showed no gross evidence of tuberculosis, although microscopic sections from numerous areas revealed chronic caseous tuberculous bronchitis fibrocaseous peribronchitis caseous pneumonia incomplete atelectasis, and fibrosis Many of the bronchi showed a deficiency or absence of cartilaginous tissue suggesting faulty bronchogenesis

CASE 4—*Well marked acute tuberculosis of recent onset involving both lungs No signs of cavity formation yet necropsy revealed a bilateral bronchiectasis of limited extent in both upper lobes*

E D, No F 2055 man white farmer, aged 27, was admitted Oct 21 1915 and died March 10, 1916 An abscess of the neck (tuberculous glands?) had been opened two years before There was no history of syphilis

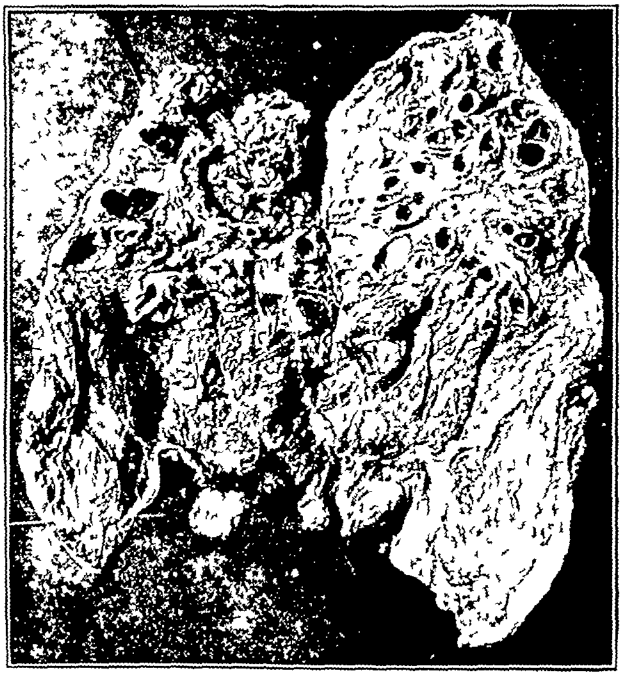

Fig 3 (Case 2)—Right lung The upper half of lung shows advanced bronchiectasis The dilatations are for the most part saccular although cylindric in some areas as illustrated on the left side where the bronchus has been split in its long axis The bronchial walls are not only dilated but at points markedly thickened The lesion corresponds probably to the type described as dilatation with thickening in contra distinction to dilatation with thinning The intervening tissue is dense and firm and here and there can be found small fibrocaseous areas not only throughout the bronchiectatic area but also in the lower lobes A small tuberculous cavity can be seen in upper right of speci men at apex The pleura overlying the upper half of the lung was densely adherent and irregularly thickened

Present Illness—The onset was two months before with pain in the throat, hoarseness and cough These increased in severity, the cough was productive of a considerable quantity of blood streaked sputum He had lost 42 pounds in weight On admission he complained of chilliness fever and night sweats

Physical Examination—He was pale and emaciated The larynx was red and cords swollen and extensively ulcerated (tuberculous) The chest was flat and emaciated with limited expansion The percussion note was generally clear except above the right clavicle and over the same apex posteriorly where it was distinctly impaired The breath sounds were generally harsh with prolonged expiration most marked in the upper part of the lungs Distinct cogwheel breathing was audible over the left base posteriorly Scattered crackling rales were heard over the upper halves of both lungs The extremities showed beginning clubbing of the fingers and toes

The blood showed hemoglobin, 67 per cent, red cells 4,700 000 and leukocytes 16 000 The polynuclears were 88 per cent and mononuclears 12 per cent The Wassermann test was negative The urine showed albumin and hyaline casts The sputum did not contain tubercle bacilli

Progress—From the time of admission the course was progressively downward with weakness irregular fever night sweats pain in the throat hoarseness shortness of breath and difficulty in swallowing He died as the result of progressive asthenia

Necropsy (Dr Dry)—There was marked pleural thickening over the apexes of both lungs more marked behind Both upper lobes showed fibrosis and many dilated bronchi Throughout both lungs there were many miliary tubercles There was a tuberculous cavity at the left apex

CASE 5—*Bilateral apical bronchiectasis associated with bilateral ulcerative tuberculosis Adhesive pleuritis with fibrosis of the lungs The recognition of both conditions during life*

M B, No F 2060 man white, aged 30 years, was admitted Oct 29 1915 and died May 17, 1916 One brother, at present in good health was treated for tuberculosis some years ago The past history was negative

Present Illness—The onset occurred two years ago with an attack of pleurisy, since which time he has had a moderately severe cough with expectoration of moderate amounts of mucopurulent sputum, at times blood streaked He is frequently dyspneic especially on exertion He has been losing strength gradually until at present he is unable to work His best weight was 120 pounds five years ago, and his present weight is 104

Physical Examination—The chest was markedly emaciated and showed a deep depression of the lower sternum and right half The expansion was generally limited, especially on the right side The percussion note approached tympany above and below both clavicles The breath sounds were generally harsh with prolongation of expiration and at both apexes anteriorly and posteriorly distinctly cavernous in character There were numerous rales of all types over the entire chest, especially at the apexes The extremities did not show clubbing

The blood showed hemoglobin 74 per cent, red cells, 4 510 000 and leukocytes 13 600, lymphocytes 22 per cent polynuclears 76 per cent, eosinophils 2 per cent The urine showed a trace of albumin with a few hyaline and granular casts The sputum was positive for tubercle bacilli The Wassermann test was negative

The Roentgen ray (Dr Borzell) showed extensive bronchiectasis involving both upper lobes with marked fibrosis On the right side as far down as the seventh rib the pleura was very much thickened, considerable infiltration of the right lower lobe

Progress—For six months the condition remained unchanged He was discharged on request and readmitted May 4, suffering from a profuse hemoptysis The hemorrhage gradually ceased, but he became progressively weaker, and died May 17 The diagnosis of chronic pulmonary tuberculosis with bilateral cavity formation with associated bronchiectasis was made both by the clinician and the roentgenologist and confirmed by necropsy

Necropsy (Dr Dry)—Both pleural cavities were completely obliterated by adhesions especially dense over the apexes In removing the lungs apical adhesions caused tearing of pulmonary tissue The lungs showed extensive fibrosis in the upper lobes with numerous small cavities which mostly were saccular bronchiectases in each upper lobe there was a distinct tuberculous cavity about 3 cm in diameter

BRONCHIECTASIS IN RELATION TO SYPHILIS AND TUBERCULOSIS

Syphilis was long considered an important factor in the "pneumopathies" until Laennec showed the unity of the anatomic lesions of tuberculosis Thereafter tuberculosis assumed the greater importance Recently Tripier and other French writers have argued *on anatomic and clinical grounds that syphilis is the* cause of the majority of cases of bronchial dilatation They exclude those cases due to foreign bodies or stenosis and the group with cylindric dilatation generalized in one or both lungs which is observed in infants and more rarely in young subjects under the influence of repeated attacks of coughing and following various lesions causing compensatory dilatation Abecassis[1] reported thirteen instances of bronchial dilatation associated with other syphilitic lesions such as aortitis, aneurysm, tabes, etc Garin and Laurent[2] found the Wassermann reaction positive in five cases which they studied In our five cases the histories were entirely negative, no evidences of syphilis were present, and the Wassermann tests were negative We have not been able to find in the literature any reference to the finding of the *Spirochaeta pallida* in this type of pulmonary lesion While syphilis is a possible factor in some cases, most students of the disease are of the opinion that it is not the important factor which the French writers emphasize

With regard to the relation of tuberculosis to bronchiectasis, we have the extreme views of Rokitansky, who considered the two diseases almost incompatible, and Trojanowsky and King, who found tuberculosis in twenty-one out of sixty-eight, and in twenty-five out of seventy cases, respectively In our five cases, tuberculous lesions were associated in four instances King[3] classified seventy cases of bronchiectasis occurring at the Brompton Hospital as follows (1) "pure bronchiectasis," those associated with tuberculosis, thirty-six cases, (2) "traumatic bronchiectasis," those resulting from aneurysm, tumor, foreign bodies, syphilitic stricture, nine cases, (3) "tubercular bronchiectasis," those associated with tuberculosis, twenty-five cases Expressed in percentage, nontuberculous bronchiectasis occurred in 66 per cent and tuberculous bronchiectasis in 34 per cent of the seventy cases With regard to the "tuberculous bronchiectasis," King is of the opinion that all of these cases were primarily tuberculous

Moderate degrees of bronchial dilatation are not infrequently found associated with pulmonary tuberculosis at necropsy, but clinically the association can be demonstrated only rarely, even when fairly well marked A probable explanation is found in the fact that when bronchiectatic lesions exist with tuberculosis, they are most frequently found in the upper lobes, and are confused with signs due to tuberculous excavation A comparison of the clinical and pathologic reports of the Phipps Institute, Philadelphia, is interesting in this connection Among 3,551 patients with tuberculosis, only 5 were complicated with bronchiectasis, among 320 necropsies, bronchial dilatation was frequently found and distributed throughout the lungs as follows left upper lobe, 40, right upper lobe, 48, right middle lobe, 31, left lower lobe, 28, right lower lobe, 24 The etiologic relationship of the two lesions is emphasized by the relatively greater frequency of involvement of those portions of the lungs where tuberculosis usually has its initial and most extensive lesion

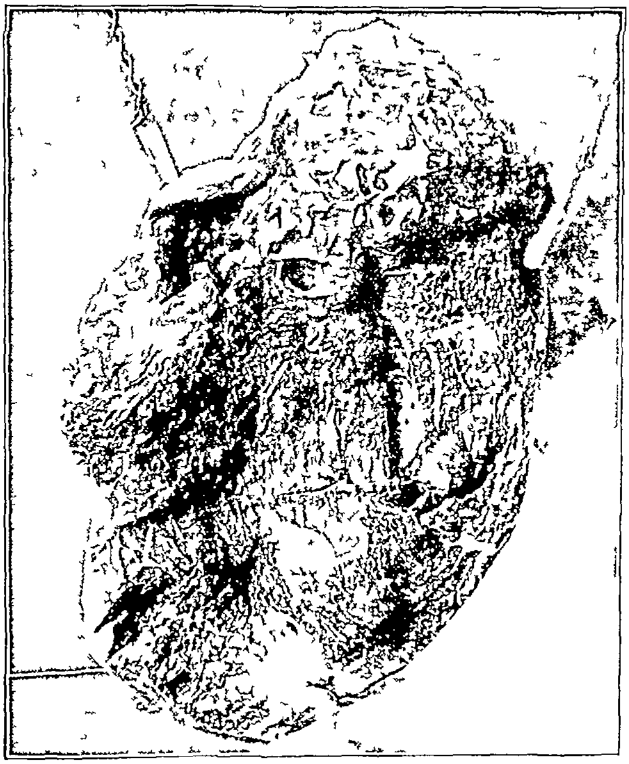

Fig 4 (Case 2) —Left lung The bronchiectasis is of the same character as in the right lung (Fig 3), though not quite as extensive Its sharp limitation to the upper portions of the lung is striking On the right side of specimen where hook is inserted a rather large cavity is seen the wall of which presents the usual appearance of a tuberculous lesion In the lower portions of the lung are numerous conglomerate tubercles The pleura overlying the upper lobes is thickened and at time of necropsy was quite firmly adherent

In the cases here reported it is important to decide, if possible, whether there is any clue to the etiology So far as the histories are concerned, in no case did the disease seem to follow any severe infection Certain causes seem unlikely to be of importance, especially those which affect the whole of the lung structure Thus the mechanical pressure of secretion, increased air pressure, atrophy of the bronchial wall, alteration of nutrition, paralysis of the fibers, nervous causes do not seem likely to operate so locally But certain other causes may have a definite influence Among those are pneumonia, tuberculosis, extrabronchial traction, most often caused by pleural adhesions to the thoracic wall and fibroid changes in the lung, a local inflammation of the bronchi, and bronchial stenosis (from a foreign body, pressure of aneurysm or tumor, gumma of a bronchus) In general we must agree with Ewart that there must be some elementary factor common to all varieties, and this is obstruction in some form Traction on the bronchial wall may arise from a peribronchitis or from a chronic adhesive pleurisy which extends inward In either case if the process extends so that there is a connection between the bronchial and chest wall, dilatation may follow

Certain of these possibilities seem to be definitely excluded in all and others in some of our cases A foreign body, aneurysm or tumor, gumma or syphilis in any form are ruled out The possibility of pneumonia is difficult to exclude in any case merely from the history, but changes resulting from pneumonia are more important than the pneumonia itself Tuberculosis was present in four of our cases However, what seems most important in this series was the condition of the pleura In all but one the adhesions were limited to the lobe or lobes with bronchiectasis This must be regarded as an important etiologic factor However, it should be said that some regard the fibrosis and pleurisy as secondary phenomena to the bronchiectasis In any event the frequent association of bronchiectasis and fibrosis is agreed on, and as fibrosis is recognized more frequently, its presence should always suggest careful study of the possibility of bronchiectasis

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[1] Abecassis Lyon thesis 1910
[2] Garin and Laurent Jour physiol et path gen 1910 xii 553
[3] King Scot Med and Surg Jour 1904 xiv, 42 481

CLINICAL FEATURES AND DIAGNOSIS

The features of the marked general cases are usually such that a diagnosis should be made readily enough The problem is a more difficult one in cases of local bronchiectasis The history may be of help, especially in any detail which suggests the possibilities of a foreign body having gained entrance to a bronchus, but of particular importance is a history of a chronic cough for a long period with considerable expectoration *without marked constitutional disturbances*, especially if the sputum is fetid The cough being paroxysmal and often induced by change in position is also suggestive Too much stress should not be placed on the odor of the sputum, in four of our cases there was no marked fetor of the sputum This may be due to the fact that in apical bronchiectasis there is better drainage and consequently not the degree of retention common in basal bronchiectasis The presence of blood in the sputum is not diagnostic, as it occurs with the same frequency in tuberculosis It was present in all our cases The sputum in a marked case is usually characteristic in amount and character, but in our cases it was not distinctive except at times in Case 1 Dyspnea is common, especially on exertion, and is most marked in cases with considerable fibrosis

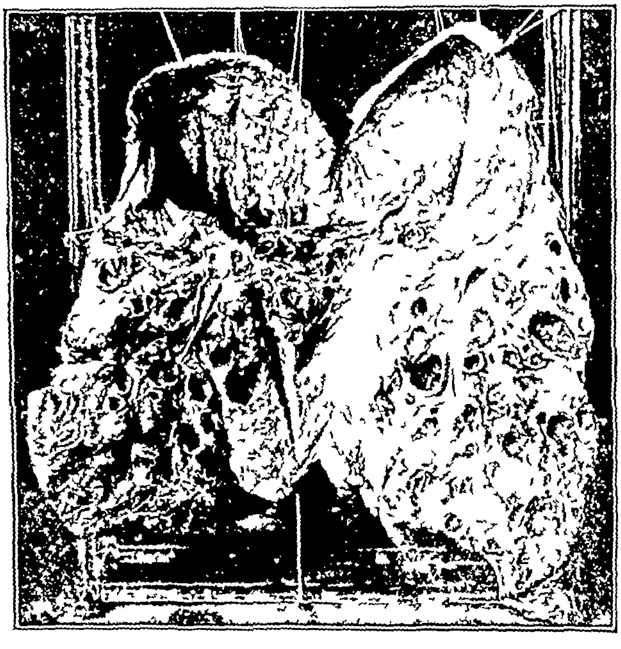

Fig 5 (Case 3)—Left lung The apex of the upper lobe is converted into a single cavity with a thin densely firm fibroid wall composed largely of thickened pleura Microscopic sections of the wall are largely fibrous tissue The lower portion of the upper lobe and all of the lower lobe are transformed into a series of cavities which intercommunicate in a remarkable fashion These cavities are bronchial dilatations The opposite lung showed a lesion of lobar pneumonia at necropsy and was free from tuberculosis A discussion as to the character of the large cavity whether tuberculous or bronchiectatic or both is contained in the text

The problem of diagnosis of these upper lobe cases of bronchiectasis is largely that of differentiation from tuberculosis When the two exist together, a diagnosis of bronchiectasis is practically impossible and, if made, an exact diagnosis as to how much of the change is due to this condition and how much to tuberculosis is still more difficult The nontuberculous cases are often regarded as tuberculosis, an error which can be made only through carelessness The sputum of a patient with advanced pulmonary lesions due to tuberculosis always contains tubercle bacilli If this was recognized, we would not miss so many cases of chronic nontuberculous lung conditions and call them tuberculous It would be interesting to know how many such there are in tuberculosis sanatoriums today, with a diagnosis of advanced pulmonary tuberculosis but no tubercle bacilli in the sputum The first case here reported is an example (the patient was in several sanatoriums with an invariable diagnosis of tuberculosis) It sounds elementary, but evidently requires emphasis *to insist that when symptoms and* signs point to advanced pulmonary tuberculosis, and repeated sputum examinations do not show tubercle bacilli, *the condition is not tuberculosis*

Another point which may aid in diagnosis is the disproportion between the signs in the lungs and the constitutional symptoms (likely to be present if the condition is tuberculosis) This is not invariable, for many tuberculous patients show the same thing, but when present over a long period, it should suggest careful study of the possibility of bronchiectasis This was a striking point in Case 1

The belief that in the diagnosis between a tuberculous and a bronchiectatic cavity the apical position of one and the basal position of the other may be considered as almost positive evidence cannot be accepted We believe that too much importance has been given to this because bronchiectasis with tuberculosis is perhaps more often apical than basal, and because apical nontuberculous bronchiectasis, either unilateral or bilateral, is probably more common than the usual teaching suggests

Roentgenographic study, particularly by the stereoscopic method, should be practiced in every case with the hope that in the future this diagnostic aid may be developed At the present time, however, most students of the disease have the opinion that the Roentgen ray is of comparatively little value in the diagnosis of bronchiectasis In the demonstration of foreign bodies, aneurysm, etc, it has a distinct field of usefulness

Treatment is largely palliative The adoption of a semierect or erect posture facilitates drainage in the apical cases After intratracheal injections the patient should be placed in a recumbent posture Autogenous vaccines may be tried, although their value is undetermined The general measures are those usually applied to improve the nutrition of the patient

SUMMARY

1 In five cases of apical bronchiectasis, the distribution was right upper lobe, one, right upper and lower lobe, one, both upper lobes, three

2 Tuberculosis was associated in four cases, three of which were bilateral

3 Syphilis was apparently excluded as an etiologic factor

4 Pleural thickening over the site of the bronchiectasis was extreme in all and limited to the area of bronchiectasis in four This suggests an important etiologic influence

5 There was marked evidence of pulmonary fibrosis in the bronchiectatic areas

6 The diagnosis is difficult, but possible more frequently if looked for in the presence of fibrosis or tuberculosis with which it is not uncommonly associated Advanced apical bronchiectasis unassociated with tuberculosis may be mistaken for tuberculosis, which error can be avoided by careful sputum examination

7 The absence of fetid sputum in these cases was probably due to the fact that drainage is more thorough in upper lobe cases

ABSTRACT OF DISCUSSION

Dr Frederick T Lord, Boston As regards the pathology, bronchiectasis is a striking feature at necropsy and the impressive picture it presents may lead us to consider it of primary importance but we should think of it, as close examination of the lungs almost invariably shows, as a relatively insignificant part of a more or less extensive bronchopulmonary involvement Concerning the diagnosis It is at times very difficult to distinguish between bronchiectasis and chronic abscess, and it must be acknowledged that we cannot always make this differentiation In the presence of such extensive bronchopulmonary lesions as we have seen illustrated in the photographs shown, this is of less importance than in other clinical cases in which the lesions are of limited extent, as indicated by physical signs and Roentgen examination In such cases a decision between bronchopulmonary infection leading to bronchiectasis and chronic pulmonary abscess may be the deciding factor between nonoperative and operative treatment The presence in the sputum of elastic tissue with alveolar arrangement indicates involvement of the lung tissue and a loss of pulmonary substance but does not exclude a complicating bronchiectasis

When the differential diagnosis cannot be established it seems best in the presence of limited and circumscribed involvement to give the patient the benefit of the doubt and consider operative interference

POSTURE IN OBSTETRICS *

J W MARKOE, MD

NEW YORK

Stimulated by a most interesting paper on the "Significance of Posture in Obstetrics" by the late Dr Albert F A King of Washington, I began in 1909 the study of its effect in the different stages of labor Up to that time I had been in the habit of having my patients grasp the foot of the bed or the back of a firm chair with both hands, and then during the pain squat down so that the knees pressed against the side of the uterus and the entire weight of the contents of the uterus was directed on the dilating cervix In the more intelligent class of patients this was comparatively easy to accomplish, but in the less intelligent and highly nervous type, they either refused to assume the position or sank down on the floor It therefore came to me that if I could provide a suitable chair I would gain my point of bringing the weight of the uterine content so that it would exert its force to the best advantage in dilating the cervix and parturient canal

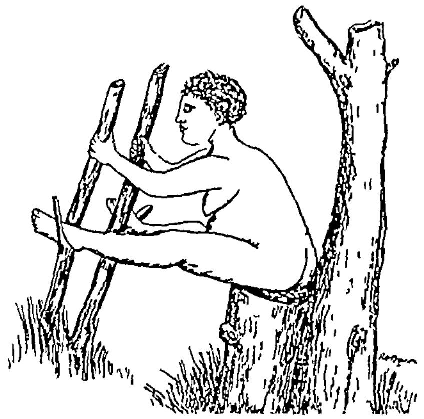

Fig 1 —Primitive obstetric chair used by native African women (This and the following eight illustrations are taken from G T Witkowski s Histoire des accouchements chez tous les peuples 1887)

Before beginning the construction of this first chair I looked up the literature on the subject and found it so interesting that I shall give a brief abstract of what I found

The antiquity of the obstetric chair, according to the opinion of Fugelmann, is that the earliest possible reference to it in our possession dates back to Moschion, a Greek physician of the second century Comments on the use of the obstetric chair are scattered through the writings of several Greek physicians, such as Aetamidoe, Aetius, Toranus of Ephesus, and Paulus of Aegina The latter states that the time has come for the mother to be placed on the chair when palpation has shown the uterus to be open and when the infant is about to be born

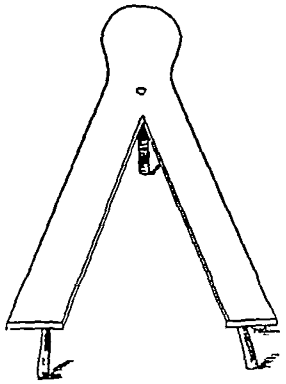

Fig 2 —Chair after model of Savonarole 1747

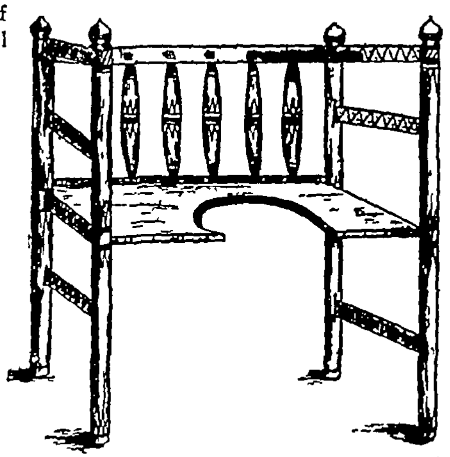

Fig 3 — Obstetric chair used in Oriental countries

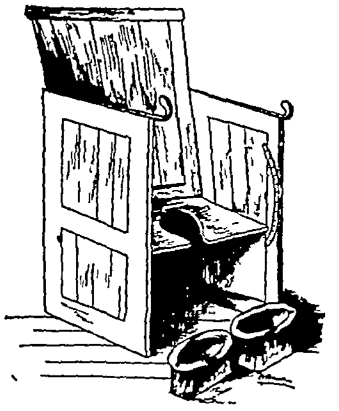

Fig 4 —Obstetric chair of Deventer 1800

Until its reappearance in the middle ages, there is a gap in the history of the obstetric chair, which is again encountered in the writings of Albertus Magnus, in the thirteenth century

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* Read before the Section on Obstetrics Gynecology and Abdominal Surgery at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

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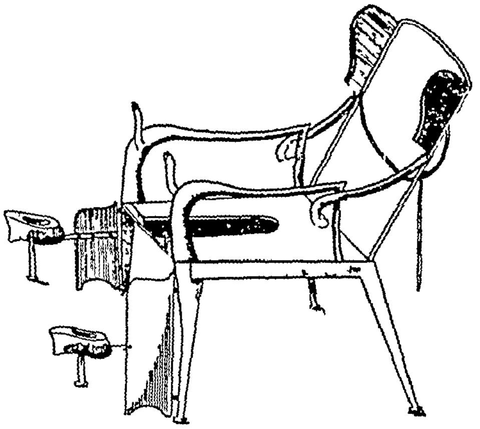

Fig 5—Stein's model

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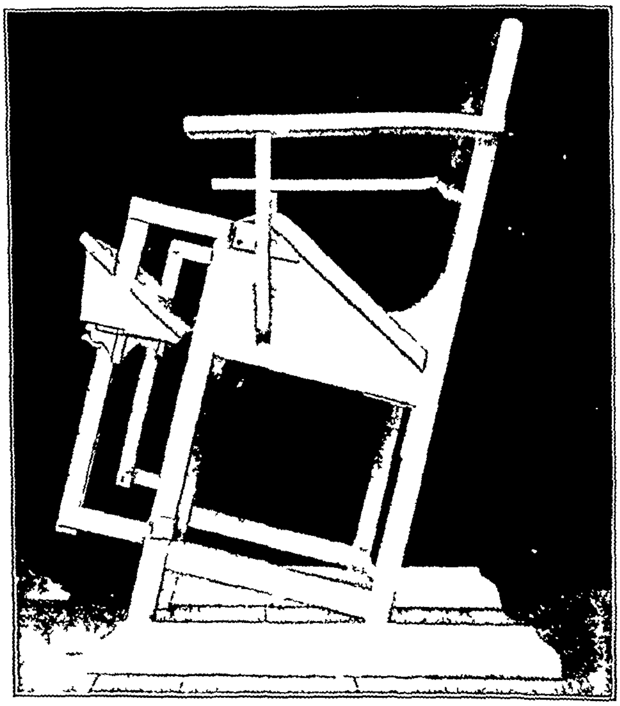

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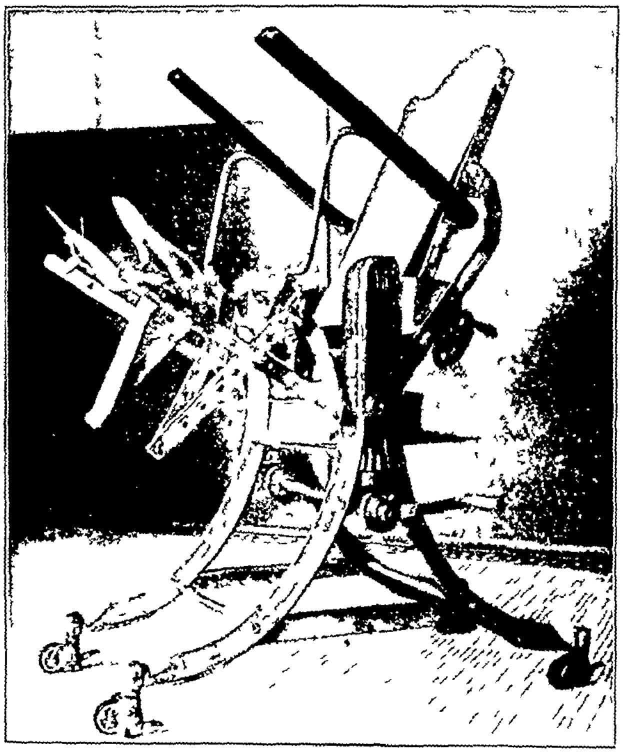

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The obstetric chair was frequently employed by Flemish women in Belgium, in the eighteenth century, and the leading accoucheurs vied with one another to construct a chair of their own invention The model of Dr Herbiniant, about 1780, was distinguished by a foot board attached to the chair by leather straps, and

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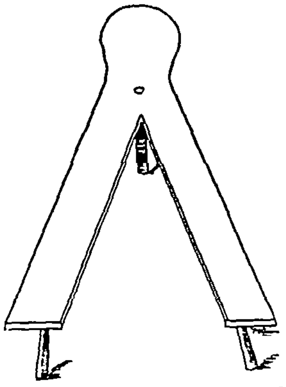

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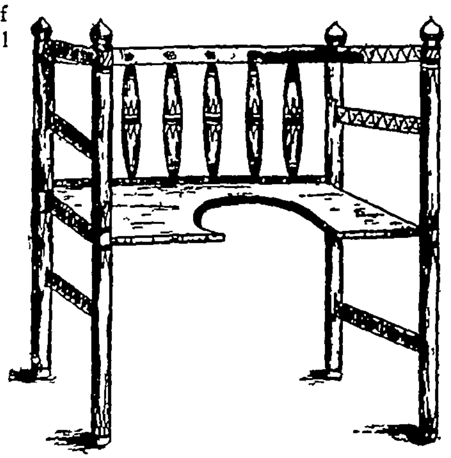

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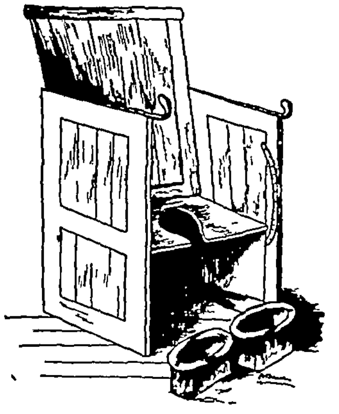

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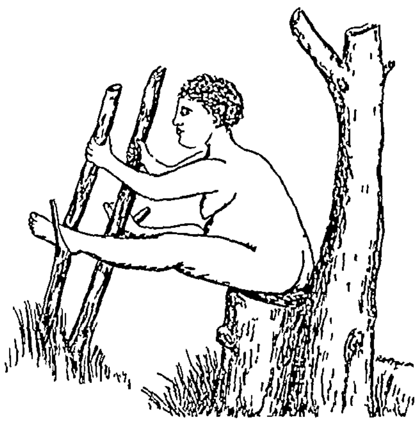

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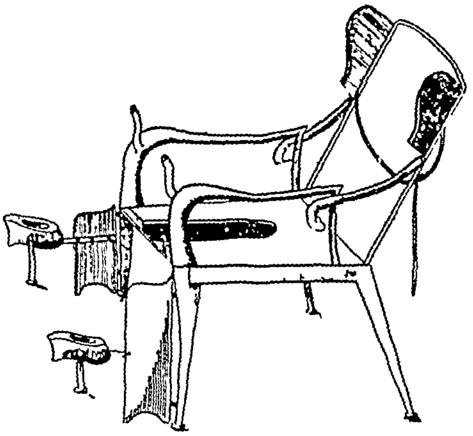

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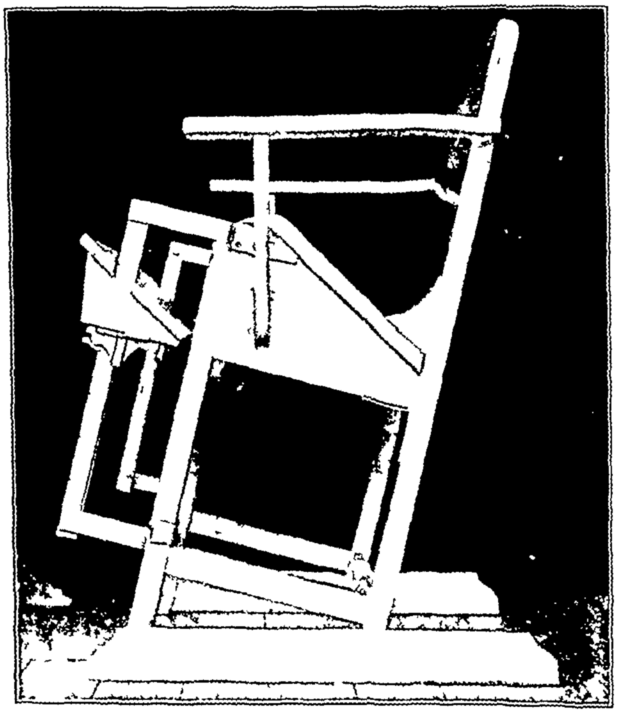

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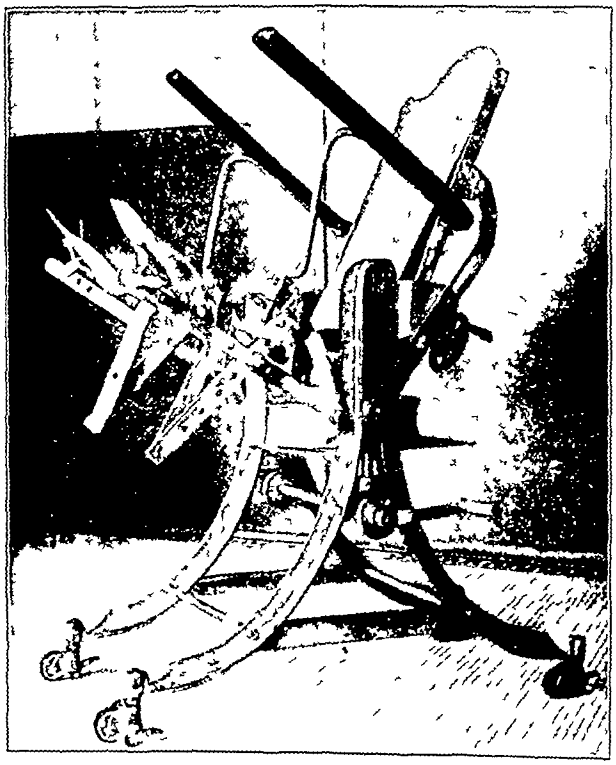

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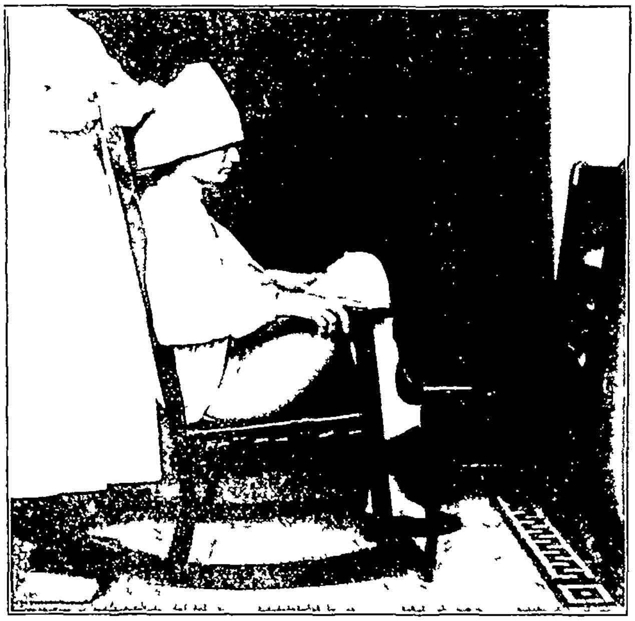

Fig 8 —Rocking chair

From an originally simple piece of furniture, the obstetric chair was developed, in the eighteenth century, into more complicated contrivances by Deventer whose so-called perforated chair was at one time very popular This adjustable but somewhat clumsy chair was even provided with an arrangement to keep the occupant's feet warm, by means of hot ashes and sand bags Heister, in the eighteenth century, recommended the use in labor of seats analogous to Rhodion's obstetric chair Stark, in 1791, advocated a model devised by himself Stein, in Marburg, Germany, toward the end of the eighteenth century, extolled a rather complicated structure, of his own invention, which had separate parts united by hooks and hinges so that it could be taken entirely apart All the pieces including the pads, could be packed in a medium sized chest, to be carried about or sent to a distance This chair could be adjusted at different heights, by means of iron bars held in place with screws It was provided with arm pieces or handles, and had a sloping footboard The entire arrangement was such that the flexed legs of the seated or reclining occupant of the chair necessarily formed an acute angle with the thighs, thus enabling her to move and propel an extraordinary weight with a minimum expenditure of strength

In the Western hemisphere the obstetric chair gradually fell into disuse, although it survived some time in rural communities of various countries At the present writing, the nations of the East are its patrons, and it is found in Japan, China, Greece, Turkey and also Syria, Egypt and Palestine In the last named country according to Engelmann, it is still an honored institution, often seen in the humble form of an old fashioned armchair In Syria, all self-respecting midwives own their obstetric chairs, built on the plan of a rocking chair, with arms and a seat scooped out in front, about 2 feet above the rockers, and cut out in a semicircle The women of the Orient are also delivered in a special chair, the separate parts of which fold up like ordinary folding chairs Among the wealthy these seats are made of ebony and inlaid with mother of pearl The midwife does her work kneeling in front of the parturient woman Among the modern Egyptians, the midwife makes use of a chair which is covered with a shawl or an embroidered napkin, and some flowers of the Henna tree, or roses, are tied with an embroidered handkerchief to each of the upper corners of the back, thus ornamented the chair is conveyed before the midwife to the house

In several villages of Africa, a delivery chair is found, consisting of a block of wood which rests against a tree, at a height of about 3½ feet above the ground Two stilts are driven into the ground on either side to serve as foot rests, and the woman makes her efforts at expulsion while taking a firm hold of the ends of the stilts with both hands It would seem to the author that this might almost be taken as the type of the primitive chair Thus it is seen that for many centuries the use of some sort of device for maintaining the upright posture has been used throughout the world With the introduction of forceps the necessity of posture was gradually lost sight of, so that at the present time but little is said in its favor, and the pendulum has swung so far to the other extreme that we are in danger of having our women all delivered by operative procedure of one sort or another Forceps and other operations are resorted to daily by many practicing obstetrics with but little more reason than that the patient has been in labor longer than appears necessary

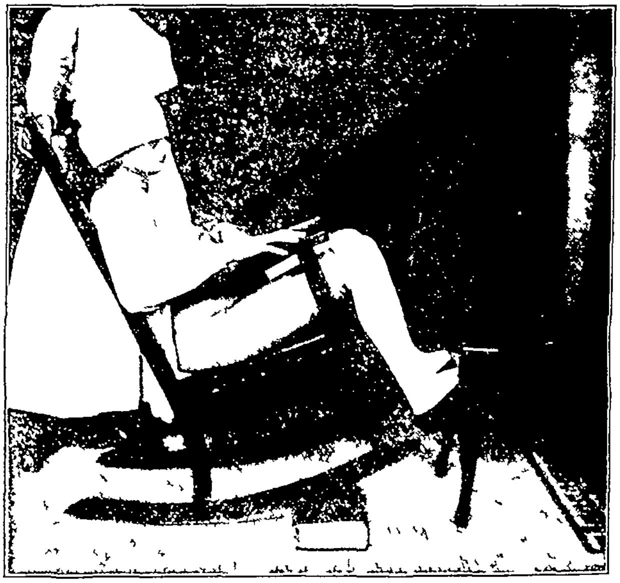

Fig 9 —Rocking chair

I would strongly urge that the first stage of labor be observed more carefully than it has been in the past and that obstetricians, both in hospital and private practice, exert their efforts to making this stage as short as is comfortable with perfect safety to both mother and child, for by so doing much suffering will be spared the mother, and the accoucheur will husband his time, first by instructing the woman how to make the best use of her pains, instructing her to hold her breath and bear down when the pains are weak and ineffectual or in case of a strong rapidly recurring uterine contraction to open the mouth and use as little as possible the auxiliary muscles of expulsion In both of these the use of posture will be of great assistance In the weak pains the sitting posture will allow the weight of the uterine contents to bear steadily on the cervical zone, slowly dilating the parts by the force exerted by the bag of waters, whereas in the case in which the contractions are severe the patient may possibly recline to better advantage than by walking about or sitting in the chair Again, in moderate degrees of pelvic contractions the chair will be of great advantage, allowing full dilatation to take place before the patient has become worn out by long continued efforts and the consequent thinning out of the lower half of the uterus with the not infrequent contraction of the ring of Bandl which, when carried too far, will mean an impossible delivery by normal process Even in the second stage in old primiparas, the chair may be used to great advantage to dilate the rigid pelvic floor Of course here the greatest care must be used not to carry it too far

TABLE 1—BABIES TWINS AND STILLBIRTHS

	Number	Babies	Twins	Stillbirths
Primiparas	282	282	5	5
Multiparas	38	27		1
Total	320	310	5	6

It has never been intended that the patient should be placed in the sitting posture at the beginning of labor and continued in that position, but rather that it be used to rest the expectant mother's efforts and allow the weight of the liquor amnii to do its part to the best advantage Each case must be judged by itself, the patient going from the bed to the chair or walking about as is most comfortable for her, and yet bringing the first stage of labor to an end in the shortest time possible without risk

A search of the textbooks on obstetrics on the subject of posture shows that the sitting posture is but little considered as an aid to labor

Williams says

> During the first stage of labor the patient usually prefers to move about the room, and frequently is more comfortable when occupying a sitting position During this period, therefore she should not be compelled to take her bed unless she feels so inclined and when she does so she should be cautioned against attempting to hasten labor by voluntarily bringing her abdominal muscles into play, for they have little or no effect on the dilatation of the cervix and the effort will only serve to exhaust her strength In the latter part of the first stage the pains generally become so severe that the patient instinctively seeks the recumbent position, but if she is still moving about the room or sitting up, she should go to bed immediately on rupture of the membranes and the beginning of bearing down pains

TABLE 2—ANATOMIC CONDITIONS

	Normal Pelvis	Abnormal Pelvis	Total
Primiparas	226	56	282
Multiparas	29	9	38
Total	255	65	320

Cragin says

> On the other hand it is only fair to the patient that she should be visited and carefully examined by her obstetrician as soon as her labor is well started and that he should remain with her during her second or expulsive stage and for at least an hour after the birth of the child After a careful examination during the first stage, experience will usually indicate to the physician how long he can safely be absent and engaged in other work without being needed by the patient and if there is a well trained nurse in attendance, and especially if he can communicate with her by telephone, he is often enabled, during the first stage, to devote several hours to other work He should always hold himself in readiness, however, to come at once to the patient's house on the call of the nurse During the first stage it is a good rule not to encourage the patient to use her abdominal muscles during uterine contractions as it usually does little good, and by forcing the undilated cervix downward it tends to loosen the fascial support of the anterior wall and favors the development of a cystocele During the first stage, unless it occurs at night, the patient should be encouraged to be up and walking about, as engagement of the presenting part and dilatation of the cervix are favored by the upright position She should not be allowed, however, to become fatigued by excessive walking If the first stage begins at night the patient after the examination of the obstetrician, should be advised to get some sleep if possible, so as to have her strength for the demands of the morrow

TABLE 3—HOURS DURING WHICH PATIENTS WERE KEPT IN CHAIR

Number Hours in Chair	1 or Less	2	3	4	5	6	7	8	Not Recorded	Total
Spontaneous	45*	64	49	16	5	7		4	3	193
Low forceps	5	3	4		1	1			1	15
Medium forceps	1	2	3	1		1	1			9
High forceps				1						1
Version	1	3	1	1			1		1	8

* Of these forty five in 1 case 15 minutes 7 cases 30 minutes 1 case 35 minutes 4 cases 40 minutes 5 cases 45 minutes 1 case 55 minutes

DeLee says

> The treatment of the first stage is one of watchful expectance The duty of the accoucheur is to observe the efforts of nature not to aid, until she has proven herself unequal to the task Only when nature fails is art to enter Nothing is so reprehensive as meddlesome midwifery It has cost thousands of valuable lives Attempts to hasten the dilatation of the cervix either manually by bags, or by having the woman bear down may not be made Premature bearing down efforts of the mother aid very little in the first stage, further, it is distinctly harmful, since the child is forced down before the dilatation of the os, overstretching the broad ligaments and laying the foundation of a future prolapsus uteri Let the parturient woman walk around the room, the admission of dust into the vagina being guarded against by a large sterile pad and a T-binder She may rest at intervals on a couch lying on her back or on the side to which the occiput is directed

Peterson says

> During the first stage of labor there is little to be done beyond the moral support of the patient All necessary preparations have been made for the final moments of the delivery All that is necessary at this time is for the physician to ascertain the nature and position of the presentation and to assure himself of the normal conditions of affairs During this stage the bowels and bladder must be emptied by the methods already described The patient must be impressed with the necessity of conserving her strength at this time To this end, she should remain in her chair

or bed, according as to whether it is day or night, occasionally walking around the room in order to bring the action of gravity into play, thereby stimulating the uterus to more efficient contractions In most women and especially those with relaxed abdominal walls, much valuable assistance will be afforded at this time by the wearing of an abdominal binder This should be closely fitted to the abdominal protuberance It affords a certain amount of support to the woman, and stimulates the womb to more energetic contraction After the labor has progressed sufficiently to result in a cervical dilatation of from 4 to 5 centimeters the patient should be confined to her bed in order to avoid the possibility of a precipitate escape of the child

TABLE 4—ABNORMAL PELVES

	Primiparas	Multiparas	Total
Contracted outlet	14	1	15
Very projecting spines	1		1
Flat pelvis	9	1	10
Justo minor flat		1	1
Justo minor	21		21
Funnel (male) type	2		2
Flat with projecting spines	1		1
Generally contracted	8	5	13
Right Nagele		1	1
Total	*56*	*9*	*65*

They all agree that the woman should walk about and even sit in a chair, but its actual value in shortening the time of labor is not touched on The one objection, the use of the abdominal muscles during the uterine contractions by the woman bearing down, I heartily agree with when the pains are strong, but this applies to her while she is walking around the room as well as when she is sitting in a comfortable chair, where she is much less likely to attempt such efforts and at the same time the pressure of the bag of waters is exerting its best efforts

I believe that every obstetric patient should have the "test of labor," however abnormal the existing condition may be If I may be pardoned the enthusiasm which only a practical experience can give, I should go further and say, with special reference to the abdominal cases encountered in obstetric work, that no opportunity should be lost, no deviation from the normal too great, to try the obstetric chair if for no other reason than the dilatation of the cervix We must not expect the impossible, such as a spontaneous delivery of a large baby in a markedly contracted pelvis or in cases of grave deformity with presentations impossible of delivery where all sorts of bad handling already handicap any procedure But the obstetric chair has certainly justified itself in our experience by shortening the time of labor with benefit to mother and child, to say nothing of the time saved to the accoucheur

TABLE 5—DELIVERY

	Spontaneous	Low Forceps	Medium Forceps	High Forceps	Version	Breech Extraction	Cesarean Section	Total
Contracted outlet	4	3	6			1		14
Very projecting spines			1					1
Flat pelvis	4		3		1		1	9
Justo minor	8		7		2	3	1	21
Funnel (male) type		1	1					2
Flat with projecting spines				1				1
Generally contracted	5	3						8
Total	21	7	18	1	3	4	2	56

In an earlier article I suggested that a folding chair might be improvised which could be constructed of such material that its sterilization might be easily accomplished and of such small size that it might be folded up and carried from case to case As yet this has not been easy to do, and I have therefore turned to the rocking chair found in every home that can be made into an excellent obstetric chair Our method of using the chair is as follows When regular contractions have been established, the patient is instructed to conserve her strength by not remaining too long in one position, but to sit from time to time in the chair with the knees elevated so that they support the enlarged abdomen and to have the chair so padded with pillows, blankets, etc, that the maximum of comfort is afforded In such a chair, if her pains are weak, she may comfortably sleep for half an hour or more, and the accoucheur will be satisfied by the fact that the weight of the uterine contents is being exerted on the cervix, *not in a harmful way but with a steady hydrostatic* pressure that at this stage does more to shorten the labor than anything else If she becomes restless in the chair or the contractions are severe, she may with benefit walk about the room or even recline

TABLE 6—PRIMIPARAS WITH NORMAL PELVES

Delivery	No	Average Time in Chair	Stage When Put in Chair		Aver Duration of Labor Hrs	Progress in Chair		
						Good	Fair	Poor
Spontaneous	193	2	157	36	12	178	12	2
Low forceps	15	1¾	14	1	22	9†	3	3
Medium forceps	9	2½	8	1	28	2*	4	3
High forceps	1	4	1		20			1
Version	8	3	7	1	22	5§		3

* One not recorded 1 inertia

† Of these fifteen 1 right occipitoposterior presentation 1 eclampsia 1 lobar pneumonia 9 weak pains—inertia 3 not recorded

Of these nine 1 left occipitoposterior presentation not rotated 2 prominent spines 3 rigid cervix 2 inertia weak pains 1 not recorded

§ Of these eight 2 right occipitoposterior presentation 1 cord prolapsed 1 twin 1 eclampsia 1 inertia 1 no advance 1 not recorded

Again, the inclination of the chair is of the greatest importance, as in old multiparas with an abdominal wall so relaxed that the uterus is completely antiflexed in the upright position A binder should be applied and the chair so tipped back that the axis of the uterus will point directly downward into the pelvis

That the chair should be used with discretion, I most certainly believe, but that rule applies to all medical procedures

Since I began to use the chair, I have performed fewer operations, such as cesarean section, versions, forceps, etc, and a study of my statistics shows an improvement, there being a decrease in deaths of mother, fewer stillbirths and fewer deaths of children following labor As far as perineal lacerations go, it has not apparently affected them as far as can be seen in the few cases collected, and I believe that where lacerations or other complications of a similar nature do occur, the fault lies with the accoucheur in not controlling the progress of the child through the parturient canal in time to prevent such accidents

The statistics in Table 1, based on 320 cases, include 179 reported in September, 1915

From the standpoint of anatomic conditions encountered, Table 2 is of interest

Table 3, arranged under the headings of hours during which the patients were kept in the chair, is of interest A consideration of this table and the explanatory note shows that in about 20 per cent of the cases labor lasted only one hour or less after the patient was put in the chair In one case fifteen minutes apparently sufficed, though here the cervix was almost fully dilated at the time, while in eighteen cases in which the cervix was only 1 or a few fingers dilated, less than one hour was required

In the next group of cases, the patients with abnormal pelves, Table 4 gives the important features

TABLE 7—DELIVERY

Pelves	Spontaneous	Forceps	Cesarean Section	Total	Average Time in Chair	Average Duration of Labor
Generally contracted	3	1	1	5	1½	16
Contracted outlet	1			1	2	13¼
Flat	1			1	1	38
Right Naegele	1			1	4½	5½
Justo minor flat			1	1	2½	13
Total	6	1	2	9		

If we consider the primiparas in this group and their behavior with the obstetric chair, we observe the data given in Table 5

Considering the first portion of this table, namely, the primiparas with normal pelves, an analysis and consideration gives the features presented in Table 6

Reference to the last part of this table, that referring to the progress in the chair, taken in conjunction with the notes appended, shows that interference was necessary in six cases because of abnormalities of fetal position 3 right occipitoposterior presentation, 1 left occipitotransverse presentation, 1 prolapsed cord, 1 twin, and in 8 cases because of abnormalities in the mother 1 lobar pneumonia, 2 eclampsia, 2 prominent spines, 3 rigid cervix

In the remaining nineteen where operative interference was resorted to, excluding five where notes of the progress were not made, there were fourteen cases where uterine inertia prevented delivery

It will thus be seen that in twenty-one primiparas where conditions anatomically might have presupposed, or rendered necessary, operative interference, spontaneous delivery occurred In other words, in about 37 per cent o fifty-six cases the obstetric chair apparently obviated the necessity of any other artificial aid

TABLE 8—ABNORMALITIES IN MULTIPARAS

	Spontaneous	Low Forceps	Medium Forceps	Version	Breech Extract	Total
Right occipitoposterior	11	5	5	2		23
Left occipitoposterior	1		2	1		4
Right occipitoposterior	5		2			7
Left occipitoposterior	5		2	3		10
Breech	7				3	10
Transverse	2				1	3
Left mentoposterior	1					1
Total	32	5	11	6	4	58

Of these twenty one cases, fifteen were in the first stage of labor and six in the second In two cases the patients were kept in the chair five and six hours, respectively, while in nine cases one hour sufficed to effect delivery, six cases needed two hours, and seven cases needed three hours for spontaneous delivery The average duration of the entire labor in these cases was about twenty-one hours, while the average time in the chair was about two and one-half hours

Of the twenty-nine multiparas with normal pelves, all but one was delivered spontaneously Of the nine multiparas with abnormal pelves, Table 7 shows the important points

In only two cases of the multiparas spontaneously delivered was the patient in the chair for more than two hours A brief table of this series of cases, arranged with reference to the occurrence of abnormal positions and presentations and the resulting deliveries, is of decided interest (Table 8)

From this table it will be seen that in almost 50 per cent of twenty-three cases of right occipitoposterior positions, in one case of a total of four left occipitoposterior positions, in cases of transverse and in one case of chin posterior spontaneous delivery occurred

With regard to the case with the face presentation the effect of the chair was to cause a rotation forward to a left mento-anterior position, and then to effect spontaneous delivery

A brief survey of these tables, limited as is the number of cases on which they are based, cannot but bring home the distinct advantage the use of the obstetric chair offers, especially too in those cases in which, for some abnormality in the fetus or mother, operative interference seems to be indicated

20 West Fiftieth Street

ABSTRACT OF DISCUSSION

Dr Rudolph Wieser Holmes Chicago Dr Markoe's paper presages a revival of discussions on purely obstetric topics in our various medical societies, in contrast to the polemics on surgical intervention which have done inestimable harm to obstetric progress I am sorry that Dr Markoe did not go more fully into the question of posture in its influence as a correctional procedure, for he who has mastered the knowledge of the relation of posture to the course of labor has grasped many fundamental principles in the art of obstetrics which have a vital bearing on the simplification of difficulties due to abnormal mechanism of birth Dr Markoe did not picture the original obstetric chair—namely, squatting This is the most natural posture for the emptying of the pelvic organs in its obstetric relation, it brings the axis of the uterus more nearly into line with the axis of the pelvis and, therefore, brings more certainly the action of the expelling forces in a line parallel to the birth canal Crouching or as it more comfortably may be realized by Dr Markoe's chair, certainly theoretically and practically has an important place in obstetric therapy however, this effect from crouching may be accomplished readily by the method of Samuel, which, in fact, secures the crouching attitude while recumbent in bed Samuel suggests that the shoulders be raised, and as the pain begins the woman grasps her legs below the knees In the act of straining while in this attitude she simulates the squatting posture of the aborigines I cannot quite see how the labor is materially shortened if the average time of labor of his patients be twenty hours and the duration in the chair be two hours It never has been my privilege to use an obstetric chair, though constantly, in the early hours of labor, the women in my charge are encouraged to sit in a comfortable easy or rocking-chair Such a position encourages the descent of the head through the brim In abnormal labor, there hardly is a deviation of position or presentation of the fetal body which may not be enormously benefited by a timely application of the principles of posture in labor, in certain of these deviations of position an appropriate posture is a very definite correctional procedure

Dr Charles S Bacon Chicago I have not been in the habit of allowing the patient to be around the room, sitting on chairs largely because of the danger of contamination One takes a great deal of pains to sterilize everything about the patient and to have her thoroughly clean The danger of contamination from the floor, chairs, etc, is obvious or bed according as to whether it is day or night, occasionally walking around the room in order to bring the action of gravity into play, thereby stimulating the uterus to more efficient contractions In most women and especially those with relaxed abdominal walls, much valuable assistance will be afforded at this time by the wearing of an abdominal binder This should be closely fitted to the abdominal protuberance It affords a certain amount of support to the woman, and stimulates the womb to more energetic contraction After the labor has progressed sufficiently to result in a cervical dilatation of from 4 to 5 centimeters the patient should be confined to her bed in order to avoid the possibility of a precipitate escape of the child

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20 West Fiftieth Street

ABSTRACT OF DISCUSSION

Dr Rudolph Wieser Holmes, Chicago Dr Markoe's paper presages a revival of discussions on purely obstetric topics in our various medical societies, in contrast to the polemics on surgical intervention which have done inestimable harm to obstetric progress I am sorry that Dr Markoe did not go more fully into the question of posture in its influence as a correctional procedure, for he who has mastered the knowledge of the relation of posture to the course of labor has grasped many fundamental principles in the art of obstetrics which have a vital bearing on the simplification of difficulties due to abnormal mechanism of birth Dr Markoe did not picture the original obstetric chair—namely, squatting This is the most natural posture for the emptying of the pelvic organs in its obstetric relation, it brings the axis of the uterus more nearly into line with the axis of the pelvis and, therefore, brings more certainly the action of the expelling forces in a line parallel to the birth canal Crouching or as it more comfortably may be realized by Dr Markoe's chair certainly theoretically and practically has an important place in obstetric therapy however, this effect from crouching may be accomplished readily by the method of Samuel, which, in fact secures the crouching attitude while recumbent in bed Samuel suggests that the shoulders be raised, and as the pain begins the woman grasps her legs below the knees In the act of straining while in this attitude she simulates the squatting posture of the aborigines I cannot quite see how the labor is materially shortened if the average time of labor of his patients be twenty hours, and the duration in the chair be two hours It never has been my privilege to use an obstetric chair, though constantly in the early hours of labor the women in my charge are encouraged to sit in a comfortable easy or rocking-chair Such a position encourages the descent of the head through the brim In abnormal labor, there hardly is a deviation of position or presentation of the fetal body which may not be enormously benefited by a timely application of the principles of posture in labor, in certain of these deviations of position an appropriate posture is a very definite correctional procedure

Dr Charles S Bacon Chicago I have not been in the habit of allowing the patient to be around the room sitting on chairs largely because of the danger of contamination One takes a great deal of pains to sterilize everything about the patient and to have her thoroughly clean The danger of contamination from the floor, chairs, etc, is obvious

I have also been somewhat in doubt on the value of abdominal contractions in the first stage of labor, feeling that it is chiefly the contraction of the uterine muscle that is of value in the dilatation of the cervix The experience of Dr Markoe, however, leads me to want to try the method, and I should like to ask him how the danger of contamination can be avoided

Dr Edward P Davis, Philadelphia I wish to call your attention to the value of posture in prolapse of the cord, where the knee chest position and vaginal reposition of the cord are often successful, and also to the value of the Walcher position in moderate pelvic contraction I have often prevented cesarean section by bringing about labor by resorting to a posture on the knees In the maternity department of the Jefferson Hospital of Philadelphia are several flights of stairs Our matron is possessed of abundant experience and common sense, and when a woman with moderately contracted pelvis comes into the maternity ward we frequently have that woman scrub those steps This position with the vigorous use of the arms, results in a very large number of spontaneous labors and we are saving a great many unnecessary cesarean sections

Dr E Gustav Zinke, Cincinnati I do not see how we are going to prevent intelligent men from performing cesarean section and other obstetric operations if they deem them necessary The judgment of the obstetrician, after a careful study of the signs and symptoms of the case before him is his guide There is no question that some obstetric operations are performed too often, perhaps, without justification At the same time we must make due allowance for errors of judgment and not condemn procedures which have proven of value The doctrine of narrow pelvis is scarcely of age It took 150 years for its development Its therapy has been amply tested in the hospitals of Europe in the last fifteen years and has given very satisfactory results The new treatment of narrow pelvis consists of the test of labor hebosteotomy and cesarean section The test of labor in 80 per cent of the patients has resulted in spontaneous labors, 15 per cent of the remaining patients were delivered by hebosteotomy, and the other 5 per cent required cesarean section, and this with a maternal mortality of 0 1 per cent, and a fetal mortality of 4 per cent

Permit me to call attention to just one sign or symptom which has been mentioned here, the ring of Bandl, the contraction ring Whenever it shows itself it should always be considered a danger signal of impending rupture of the uterus It means that the lower segment of the uterus has become exceedingly attenuated and that there is danger of rupture of that part of the organ He who is on his guard and knows the cause of the contraction ring will not hesitate long but resort to some operative procedure and deliver his patient as soon as possible

Dr James W Markoe New York My paper should be entitled "The Obstetric Chair" because no one could cover the subject of posture in fifteen minutes I purposely left out the picture of the squatting posture and put in the picture of the chair because my paper was really on the obstetric chair In regard to the question of contamination, referred to by Dr Bacon, the woman was so placed undraped merely to show the position Every woman in our hospital is scrubbed and cared for according to the modern method of asepsis She has a T-binder on and an aseptic pad Regarding the muscles, I do not advocate the woman using her abdominal muscles and I hold that she will be less likely to use them in the chair where she is comfortable and happy than in walking around the room What I hold is that the chair gives the hydrostatic pressure to the liquor amnii to a far greater extent than do the muscles Regarding Dr Davis' criticism, I did not go into all the postures since I referred particularly to the chair I feel that we ought to go more into the question of posture I agree with Dr Zinke regarding the ring of Bandl as one of the important signs of rupture of the uterus, although it is entirely extraneous to this subject I have this year had four hysterectomies where the ring of Bandl had appeared just below the umbilicus In every one of these cases pituitary extract had been used

PREMATURE VENTRICULAR SYSTOLES

THEIR CLINICAL SIGNIFICANCE *

J E GREIWE, M D
CINCINNATI

In presenting a number of polygraphic and electrocardiographic tracings to illustrate the subject of this paper, I shall endeavor to bring before you certain first principles in the recognition and treatment of this form of heart irregularity While it is desirable that, from the standpoint of the clinician, graphic tracing should be made when practicable, nevertheless, we are able to distinguish such abnormalities in the heart action by careful palpation of the pulse and auscultation of the heart sounds

It may be safe to say that in general, premature contractions of the ventricle have given rise to too many unfavorable prognoses, and it is equally apparent that the subject of premature ventricular systoles has not been given the proper attention from the standpoint of therapy

As a matter of fact, the point of primary importance and a point which I desire to emphasize from the very start is this, viz, that the irregularity of the heart action to which I wish to call attention has too often been attributed to disease of the heart itself, whereas the real seat of trouble is usually extrinsic to the heart In fact, I wish most emphatically to state that in a great majority of instances premature ventricular systole—meaning a too early contraction of the lower chamber of the heart—is a functional disturbance

Premature ventricular systoles may be of very short duration, they may last for a somewhat longer time and finally disappear altogether, or they may be more or less constant They may be found in connection with hearts that show absolutely no other sign of disturbance, and they may be encountered in cases in which there is manifest organic disease of the heart Even in the latter case, the premature ventricular discharge may not be the result of the organic lesion, but may again be the expression of a toxic condition in which the heart muscle becomes oversensitive

Just as a patient with brain tumor may show signs of hysteria to complicate the clinical picture, so also may we have organic disease of the heart with certain functional disturbances, which are not essentially of cardiac origin

THE RECOGNITION OF PREMATURE VENTRICULAR SYSTOLES

As a rule, the recognition of premature ventricular systoles is a matter of no great difficulty In the majority of cases auscultation of the heart will prevent errors in diagnosis, since these premature contractions of the lower chamber of the heart usually give rise to a very characteristic sequence of heart sounds

A glance at Figure 1 will demonstrate a number of factors which will serve to illustrate points in the diagnosis The first five beats are regular in their sequence and they are the result of stimulation from the sinus node The auricular contractions are regular, as may be seen by a glance at the chart The *sixth* contraction of the ventricle is premature It is in advance of the normal stimulus coming from above and, because the ventricle is in a refractory state when the sixth auricular stimulus arrives, the lower chamber is unable to respond to this command The ventricle, therefore, rests for a longer period than usual, and does not contract or does not become active until the seventh *stimulus arrives This long pause is referred to as the* compensatory pause At the seventh stimulus the heart again contracts normally and this seventh normal beat is then seen to be followed by another premature contraction of the ventricle with the usual development of the period of compensatory rest Here we have a diagrammatic representation of the fact that the space preceding the abnormal beat plus the space following the premature contraction is equal to the distance between two normal heart cycles

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* Read before the Section on Practice of Medicine at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

Auscultation of the heart sounds usually shows that no heart tones have been lost, for the abnormal beat is, in the majority of instances, accompanied by the first and second heart tones

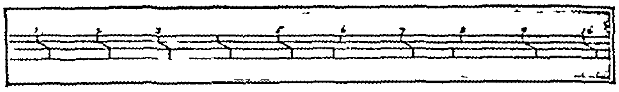

Fig 1 —Diagram to illustrate premature contractions of the ventricle

Auscultation of the heart tones also reveals the presence of the long pause after the premature beat

Careful palpation of the radial pulse will usually reveal the presence of a small wave At times, however, the small beat is entirely lost on the radial, indeed, the sphygmograph may even fail to show the faintest trace of a wave It may or may not be evident in the carotid artery As a matter of fact, some of these premature contractions of the ventricle may be so weak and so early that the semilunar valves at the aorta are not opened

As a result we may have a change in the auscultatory phenomena We may have the ordinary first and second sounds of the heart with the abnormal beat, or we may have only the first sound if the aortic valves are not opened by the premature contraction of the ventricle or, as happens in a few instances, even this first sound fails to materialize, or at least is not constantly audible The latter condition must of course be very rare The polygraphic and more particularly the electrocardiographic examination removes all doubt as to the real condition

In some instances the premature contractions of the ventricle are grouped in such a manner as to give rise to the bigeminal pulse In the bigeminal pulse (Fig 2) every second beat is a premature ventricular systole The premature beat in the radial is scarcely perceptible to the palpating finger and, indeed, it is at times not seen in the polygraphic tracing The high peak in the jugular—the c-a peak, unusually high and sharp, shows the combination of two elements, the ventricular and auricular phases coming practically at the same time Such a pulse is often mistaken for heart block

I desire to present a number of tracings which show premature ventricular systoles

A study of the electrocardiograms with the radial pulse is of great clinical interest Figure 3 shows two premature ventricular systoles The deflection in both instances is downward and this (apex negative) deflection is followed by a very marked deflection upward, the time corresponding to the simultaneous "P" and "T" wave There is a long compensatory pause, as may be seen both in the electrocardiogram and the accompanying arterial tracing (radial pulse) Following the premature ventricular systoles, there is a quickening of the heart action, due to a more rapidly following sinus stimulation The two beats following the premature ventricular systoles follow more closely and then the normal rhythm is established, until the second premature ventricular discharge takes place toward the end of the tracing

Figure 4 shows two tracings from the same patient In Lead I the pulse is quite regular In Lead II there are six premature ventricular systoles, the last four occurring regularly with the third beat of the heart

The upper tracing (Lead I) shows a series of very regular beats with the "P," "R" waves well defined The lower tracing shows four regular beats followed by a premature ventricular systole which precedes the "P" wave by a small unit of time In this tracing there are six premature systoles of the ventricle After the first premature beat there is a large downward deflection at a period corresponding to the time of auricular systole There follows a compensatory pause with a normal *heart cycle Immediately following this normal beat* there is the second premature ventricular systole with, however, a small upward deflection of the "R" wave Following the "S" deflection, which is quite pronounced, the "P" wave comes along just before the "T" wave, and there the "P" + "T" wave is exaggerated

In this instance the patient has albuminuria, hypertrophy of the left ventricle and a somewhat enlarged aorta — Wassermann negative Here, in looking for some extrinsic cause for the disturbance of the heart rhythm, I found a pronounced pyorrhea alveolaris Pockets of pus were found from which large quantities of pus could be pressed The patient was referred back to the family physician with the suggestion of immediate dental treatment[1]

In certain instances, premature ventricular systoles may give the impression of the pulse of auricular fibrillation It is evident that we should be on our guard because of the difference in prognosis and therapy The tracings in Figure 5 might suggest fibrillation The jugular curve, however, reveals premature ventricular systoles

Figure 6 illustrates a form of premature ventricular systole which differs considerably from the usual type in that there is a fairly long series of premature ventricular systoles — the ventricular discharge rapidly encroaching on the preceding auricular stimulus until it precedes it by a definite interval After eight such premature systoles the normal rhythm becomes established for a time The upper two tracings in Figure 6 are from Lead I In Leads II and III, we have not only premature ventricular systoles but in Lead II there are two true *extrasystoles* — the number of ventricular beats being in excess of the auricular beats This case was one of rather mild endocarditis following a large abscess in the neck to the right of the thyroid cartilage

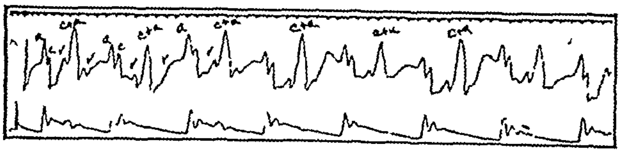

Fig 2 —*Bigeminal pulse in which every second beat is a premature* ventricular systole

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[1] I am informed by the family physician *June 14 1916* that the treatment of the teeth has not only relieved the pyorrhea, but that the heart action is now absolutely regular

Although it is usually assumed that true extrasystole occurs only when the pulse rate is rather slow, nevertheless, we have in the polygraph tracing shown in *Figure 7* an instance of a rather frequent rate with true *extrasystoles* thrown in between every third and fourth beat The diagram illustrates that we have an increase of the number of ventricular beats above the number of auricular contractions This case is one in which there is both tonsillar infection and pelvic disease

I do not wish to multiply the number of illustrations of the subject There are many more interesting phenomena in connection with premature ventricular systoles, but the tracings here presented are sufficient to bring out the main points

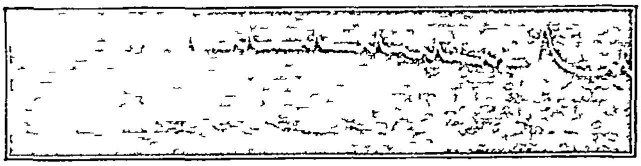

Fig 3 —Premature contractions arising in the left ventricle

SYMPTOMS

The occurrence of premature ventricular systoles may give rise to distinct subjective disturbances These symptoms may be pronounced or they may occasion a mere passing discomfort The degree of disturbance may be such as to occasion great alarm and this is particularly the case in neurotic or hypersensitive individuals On the other hand, the grouping of the premature ventricular systole, as in the bigeminal pulse, may cause the patient comparatively little concern There is, however, a temporary disturbance in the mechanism of the heart, and this alteration in the circulation is usually quite manifest in the violent pulsation in the neck The patient may experience a disagreeable sense of suffocation, or, as happens in the premature beat of nodal origin, the auricle and ventricle contract at the same time, with the result that the jugular pulse becomes exaggerated Again the beat following the compensatory pause may be, because of the greater filling of the ventricle, more pronounced and give rise to a distinct throb in the neck or in the head

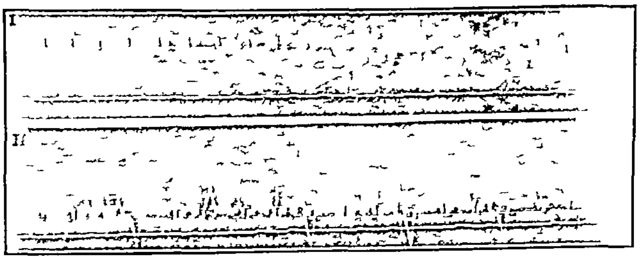

Fig 4 —Two tracings from the same patient upper tracing Lead I lower tracing Lead II

I find it impossible to dilate more fully on the possible symptomatology of premature ventricular systoles Time does not permit of a full description of the individual symptoms

ETIOLOGIC FACTORS

The frequency of premature ventricular systoles and their association with toxic conditions are matters of extreme importance in diagnosis and treatment

This form of irregular heart action is found in connection with toxic conditions arising in the alimentary tract, in disease of the gallbladder, in infectious conditions arising in the accessory sinuses of the nose, in suppurative processes, both acute and chronic, in diseases of the kidneys, and in conditions giving rise to high arterial tension It is furthermore often attributed to the excessive use of tea, coffee and tobacco Personally I have not been able to satisfy myself of the etiologic relationship of premature ventricular systoles and the use of tea, coffee and tobacco These agents certainly have a decided influence on the circulation, and while I have frequently seen tachycardia resulting from the abuse of tea, coffeee and tobacco, and while the products so absorbed have a decided tendency to produce insomnia, I have not observed any such effects as premature ventricular systoles While I recognize the possibility of tea, coffee and tobacco as possible agents in the production of premature ventricular systoles, we should not be too quick to assume this as a fact

Formerly any decided irregularity of the heart action led to a diagnosis of myocarditis However, one cannot have practiced medicine for any length of time without having been impressed with the fact that constipation is a factor of great importance and frequency in the etiology of premature ventricular systoles It has been my experience to notice the disappearance of such heart irregularity after the administration of a good dose of castor oil I recall here the case of a patient of 70 years with hard arteries and pronounced premature ventricular systoles and where on account of the age and arterial disease, the diagnosis of a chronic myocarditis seemed at first justifiable Here, to my great satisfaction, the pulse became absolutely regular after a thorough cleansing of the intestinal tract Every trace of irregularity disappeared within twelve hours after the administration of castor oil

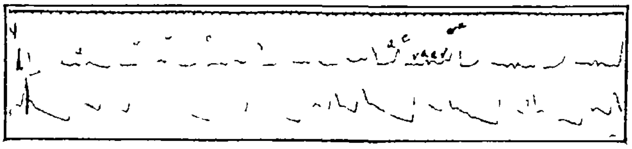

Fig 5 —Marked irregularity due to frequent premature ventricular contractions.

Acute and chronic inflammation of the gallbladder have also, in my opinion, a place in the causation of premature ventricular systoles

I have furthermore quite frequently seen the bigeminal pulse in cases of pronounced ptosis of the stomach and bowels However, I am not inclined to attribute the development of premature ventricular systoles merely to the ptosis of the abdominal organs Some authorities have spoken of a reflex from the displaced organs as the responsible factor in the production of too early contraction of the ventricle This does not seem probable It is much more important and much more satisfactory to attribute the irregularity to the toxic condition so commonly found in connection with dilatation of the stomach and ptosis of the bowels

At times catarrhal and suppurative processes elsewhere, as for example about the female genital organs, and the accessory sinuses of the head, have a distinct tendency to alteration in the rhythm of the heart

Only too frequently do we find persons with premature ventricular systoles refused life insurance In one of my colleagues, the premature ventricular systoles have disappeared after successful treatment of a marked ethmoiditis I have noticed a distinct tendency to the development of premature ventricular systoles in cases of stones in the gallbladder

A very large proportion of other cases exhibiting premature ventricular systoles is found in cases in which there is a distinct evidence of disease of the kidneys Such cases may or may not be accompanied by high blood pressure It is clear that most of them have an excessive blood pressure This has led to the opinion that the high blood pressure is the prime factor in the causation of the heart irregularity When we consider, however, that so many cases of chronic nephritis with high blood pressure have no such phenomena as the premature ventricular systole, we are forced to look for other causes than the high pressure alone It is more than likely that the condition of the bowels and the toxemias of nephritis are the real factors Free purgation and attention to the diet will have a beneficial influence on the heart

Loss of sleep, worry and excitement, with their attendant wear and tear on the nervous system, have a distinct place in the etiology of premature ventricular systoles Here again we have toxemias in the excessive use of the nervous system as the probable exciting factors, and we are therefore less and less inclined to speak of irregularities of reflex nerve action As a matter of fact, as we develop in our knowledge of the physiology of the glands of internal secretion, the less we speak of reflex action on the heart These cases are toxemias

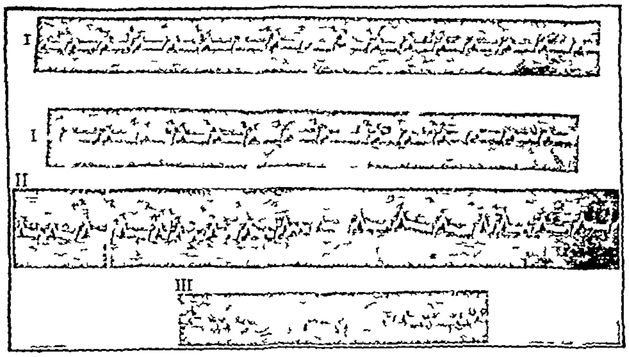

Fig 6 —True extrasystoles

The more we study our cases of premature ventricular systoles, the more are we convinced that the vast majority of such cases, even though they have organic disease, are the subject of toxemias which temporarily disturb the rhythm of the heart We are more and more inclined to the view that premature ventricular systoles are an expression of functional and not of organic disease Time does not permit a discussion of all the factors or of all the varieties Tachycardia of ventricular origin is a rare type and certainly a much more serious condition

In view of what has been said in this short paper of the causative factors, little need be added to the subject of treatment Look for the cause At times it takes patience and all possible skill to find the source of the trouble, but that is our duty to the patient

I am quite confident that this subject must appeal in a most practical way to those who are active in the great question of the risk to be accepted by life insurance companies

I should certainly advise that persons showing premature ventricular systoles and no other sign of organic disease of the heart or kidneys be not considered bad risks The life history of such cases should be an argument in favor of such a view

Wenckebach in his work on heart irregularities speaks of patients with premature ventricular systoles improving under exercise, even such exertions as in mountain climbing Such cases are no doubt a perfect demonstration that primarily the heart was not the seat of trouble Evidently the exercise in the open air restored the secretions generally

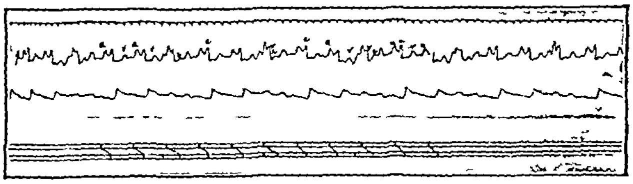

Fig 7 —Jugular and radial pulse showing true extrasystoles Diagram showing extrasystoles at x

In a certain number of cases digitalis seems to have a good influence on premature ventricular systoles, and this may be explained by the effect of the drug on the vagus Here there is a distinct tendency to slow the rate of contractions We may assume that up to a certain point, digitalis controls the irritability of the heart However, in a general way the immediate use of digitalis in premature ventricular systoles should not be looked on as good practice In other words, one should first endeavor to find the cause, and by the removal of the cause wherever possible, remove the essential factors in the production of this type of heart irregularity

PROGNOSIS

If there is no other evidence of disturbance of the heart, let the prognosis be favorable rather than unfavorable Base your prognosis not on the presence of premature ventricular systoles, but rather on the underlying cause

Union Central Building, Fourth and Vine Streets

ABSTRACT OF DISCUSSION

Dr Charles F Hoover, Cleveland The recognition of disturbances in the mechanism has after all not carried us much further in the handling and treatment of cardiac disease than twenty years ago Twenty years ago we relied on a man having certain physical exercises In recent years we attach a great deal of importance to the recognition of disturbances in the mechanism of the heart That does not give a clear conception of the heart's energy We may have the same disturbances of mechanism in purely functional disorders of the heart as in organic lesions of the heart As already pointed out, many persons have functional disorders of the heart and at the same time evidences of infection, which raises the suspicion that there is some direct relation

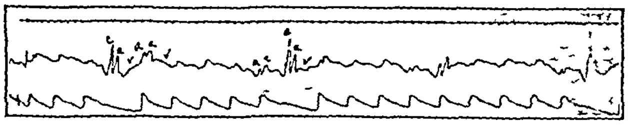

Fig 8 —Polygraphic tracing of jugular and radial pulse premature ventricular systoles with some arterial sclerosis and albuminuria a type frequently found with nephritis

between infection and functional disturbances Again there is the psychic factor, then the retrospective I know of a patient who had premature ventricular systole after a period of several days and this was due to some disturbance in temperament He was unable to swallow, when he swallowed his heart stopped Instead of expectorating he would lie on his right side and allow the fluid to drool The condition was very annoying If he turned on his left side the heart would stop The right side had a normal rhythm His physical health remained about the same The reason why these attacks ceased after five years was because he finally became convinced that he was not sick and did not have any organic disease of the heart After all, in the recognition of disturbances in the mechanism of the heart we must rely on the fingers, which can tell us the size of the heart enable us to tell the conformation of the heart, the size of the auricle, the relative size of the ventricle, all this being tested out with exercises Disturbances in the heart's mechanism can be incorporated with evidences showing that we are dealing with some organic lesion

Dr Walter J Wilson, Jr, Detroit While the importance of premature systoles may be exaggerated, it is not a good plan to put them all into a class of functional disorders and be satisfied with that If functional, it is pathologic physiology The study of the arrhythmias has resulted in the great advance in the modern management of heart disease, and the presence of any irregularity demands most careful study as to diagnosis and prognosis A more thorough knowledge of auricular fibrillation alone has resulted in adding years to the lives of a great number of heart patients The premature beats do often arise in acute infections One patient with every attack of tonsillitis shows premature ventricular beats The more severe types—and all sorts of combinations of premature beats may be observed such as every alternate beat a premature beat—are more serious as to prognosis, one case later showing persistent pulse alteration One patient under observation in 1914, in whom a series of premature ventricular beats of nine seconds' duration was present, was most seriously ill, as such series came frequently and resulted in attacks of syncope Premature beats are often associated with the more severe valvular lesions such as mitral and aortic stenosis When present in the form of premature auricular beats in mitral stenosis, they are often followed by attacks of paroxysmal tachycardia, and not infrequently are the precursors of auricular fibrillation

As to diagnosis, the majority can be detected clinically by the stethoscope, as the ventricle, not the radial pulse, should be our guide As to treatment, digitalis is contraindicated except in the decompensated heart, as it renders them more likely to appear from the slow ventricular rate, while hyoscyamus or belladonna by quickening the ventricular rate submerges the premature systoles In conclusion, while the majority of cases of premature beats are not of serious prognostic omen, a respectable minority require most careful attention

The Possibilities of Hygiene—Certain it is that more people would practice hygiene if they could be made to realize in some vivid way how much they needed it Few persons, even when they read and accept the statistics on the subject, really have a picture of the imperative need of hygiene as an integral part of every human life It is not brought home to them how widespread is illness, how numerous are preventable deaths, how many are the tendencies toward individual and racial deterioration The report of the Roosevelt Conservation Commission on National Vitality indicates that annually there are in the United States over 600,000 deaths which might be prevented if existing knowledge of hygiene were properly applied, that at least half of the 3,000,000 and more sick beds constantly kept filled in the United States are unnecessary, that the financial loss from earnings cut off by preventable disease and premature death amounts to over $1,500,000,000 annually, and that over fifteen years are lost to the average life through the lack of application of knowledge which already exists but which simply has not yet been disseminated and applied—Fisher and Fisk, 'How to Live"

PELVIC INFECTIONS IN WOMEN

COMMENTS ON SOME SPECIAL PATHOLOGY WITH APPLICATION TO TREATMENT *

THOMAS J WATKINS, MD
Fellow of the American College of Surgeons
CHICAGO

The modern treatment of pelvic infections is based on the knowledge that has been acquired in special and general infections and immunity The rapid advances made in the study of infections and immunity have resulted in radical changes in treatment, especially during the acute period of the disease

Formerly infections were supposed to be local processes, and recovery was considered to be due to local changes Since it has become known that infections, especially severe ones, are chiefly general, and that recovery is largely due to systemic immunization, important advances have been made in the treatment The inflammatory exudate is no longer regarded as a destructive element, but as a conserving one Recognition of the general character of infection and immunity has radically changed many of the notions relative to suppuration Occurrence of abscesses, especially in puerperal cases, has little bearing on the severity or duration of the infection In nonpuerperal cases the relation of suppuration to the infection is quite different, as in these cases the infective process extends along the mucous membrane, excites an increased secretion of mucus, and when it involves the fallopian tubes accumulates and generally produces abscesses The marked difference between puerperal and nonpuerperal infections, as regards pathology and treatment, depends largely on the difference in the mode of extension of the infection In one the infection travels along the blood and lymphatic vessels, and in the other by continuity of tissue, except for the systemic invasion of bacteria which occurs in both, but more actively in the puerperium for reasons that are obvious

Pelvic infection involving the peritoneum is especially favorable to the development of immunity, as it excites an early and extensive inflammatory exudate which confines some of the infective discharge and takes an important part in its destruction Pelvic exudates as a rule spontaneously become sterile The active reaction that takes place in infection of the pelvic peritoneum is probably the chief reason why exudates in the pelvis become sterile more rapidly than in many other parts of the body

It is impossible to determine the relative parts taken by general and by local immunizing forces In the puerperal case, in the absence of a localized reaction the immunity must be mostly or entirely general, and in all the acute cases of pelvic infection general immunity is probably the important curative process In the nonpuerperal cases, the inflammatory exudate in cases of pelvic peritonitis must be a factor in immunity, as pus in these cases more readily becomes sterile than pus in many other tissues of the body

TREATMENT

It is important to consider separately the treatment of acute and of chronic pelvic infections, as the problems encountered in the two are very different One deals directly with the infection, the other chiefly with the residues of infection This paper will consider only parts of the treatment of acute infections

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

As no specific serums or vaccines have been found for pelvic infections, diphtheria and syphilis excluded, the treatment, medical and surgical, relative to the acute period is limited to the use of remedies to aid the defensive forces of the body, that is, to sustain or increase the body resistance Much of the treatment that has been and that continues to be used injures body resistance

It would possibly be unnecessary and would require much time to consider in detail measures for increasing the defensive forces of the body Fresh air treatment is among the most important of these remedies It is much more valuable in these infections than in tuberculosis, where its value is generally known, appreciated, and effectively used, as the more acute the infection the greater must be the advantages of outdoor treatment It is common experience to observe that the amount of sleep obtained and the amount of food taken, are often doubled after the patient is kept out doors six or eight hours daily The importance of rest sleep, food, elimination, and general hygiene can not be too much emphasized They are much more valuable remedies than stimulants, tonics, alteratives and the like

It may seem commonplace to mention the value of keeping the patient in as cheerful a mental state as possible, but it is much more important than many remedies that are highly recommended The importance of this is appreciated by analysis of the relation of the mental state to the body functions in the well The sick must be more susceptible to this influence than the well Unnecessary pain, fear, and worry interfere much with rest, sleep, appetite and digestion

Blood transfusion, which has been employed somewhat of late, must appeal to all as a remedy of great possibilities in the treatment of very acute infections, especially in those that are unable to develop a good resistance, as shown by the presence of leukopenia Our limited experience has induced us to believe that blood transfusion is very valuable in selected cases, notably in very severe puerperal infections In the absence of apparatus or an experienced operator, the whole blood can be easily and effectually given subcutaneously It is highly desirable to obtain definite knowledge as to how much the increase in leukocytes and antibodies can be thus stimulated

The recent investigations on the action of protein substances by Jobling and Petersen[1] and Miller and Lusk,[2] indicate that these remedies may prove to be of great value in increasing body resistance

Before considering in detail the indications for some surgical measures, it seems desirable to discuss briefly the limitations of medical treatment in these cases From an experience extending over some years and from logical deductions, we believe the treatment of nearly all puerperal cases should be entirely medical, that surgical procedures are usually more injurious than helpful Our mortality and morbidity have been much lessened since our treatment has been less surgical and more medical We have ceased to fear the result in puerperal infections except in the very virulent infections, usually virulent streptococcic, the type with the Hippocratic expression, the cases in which the muscles of expression are paralyzed by sepsis, the case which is hopeless when first seen Residues in puerperal infections are uncommon except occasional adhesions The exudates usually disappear spontaneously by absorption In practice it is uncommon to encounter much pelvic pathology as a remote result of puerperal infection We will later discuss exceptional cases of puerperal infection that have surgical aspects

The treatment of nonpuerperal infections during the acute period is also chiefly medical In but very rare instances is surgical interference indicated in these cases Danger to life is slight in acute nonpuerperal infection The danger is largely one of continued morbidity and recurrent infections The importance of delaying operative treatment in pelvic infections until the acute period is terminated is effectively proved by the results of studies and observations made by F F Simpson[3]

The chief advantages of postponing surgery until the acute infection has ceased are lessened mortality, diminished postoperative pain and complications Surgery in this class of cases is not usually as efficient in dealing with the infection as with the residues of the infection When abdominal section is made during the acute infection, the residues from the operation may be worse than from the disease The part taken by an inflammatory exudate in the pelvis in the production of immunity has a bearing on the indications for surgery It is also not uncommon for patients with salpingitis to recover beyond the need for operation Surgery has become limited in the treatment of salpingitis to cases in which residues exist which are producing distress, and to prevent recurrent attacks of infection The following cases are presented to illustrate what the resisting forces of the body may accomplish in combating pelvic infection without the aid of surgery

CASE 1—Mrs N had been seen by me in consultation fifteen years before when she had a very acute gonorrheal pelvic peritonitis, with an inflammatory exudate that extended nearly to the umbilicus The presence of gonococci in the urethral discharge from her husband and in her vaginal discharge established a positive diagnosis Complete recovery resulted, except for a few friable adhesions about the ovaries, which were observed on section two years later, which was made for a large retrodisplaced uterus She has since had four normal pregnancies and is now entirely well

CASE 2—Miss H had been treated by me about ten years before for acute gonorrhea of the vagina and cervix, she later developed an acute peritonitis with large inflammatory exudates about both fallopian tubes This apparently disappeared by absorption She had a recurrent pelvic peritonitis, with similar pathology and result The only pathology which remained as observed on section some weeks later, was a few friable adhesions about the ovaries She subsequently had a third attack of pelvic peritonitis, with extensive inflammatory exudate in both tubes After recovery from this a second abdominal section was made and both fallopian tubes had apparently entirely recovered except for the presence of a few adhesions These are exceptional cases but well illustrate the possibilities of recovery of the tubes from infection

The operative measures that are used in acute pelvic infections are chiefly curettage, incision and drainage of exudates, and excision of organs These will be considered briefly

Curettage of the Puerperal Uterus—This is not in accord with the modern knowledge of infection and immunity, and has been found by experience to be a dangerous procedure It is unnecessary, as the septic uterus will empty spontaneously Its danger consists largely in causing embolic extensions from dislodgment of septic thrombi from the uterine sinuses In the worst cases usually encountered in hospital practice and consultations the patients have been curetted and have become more ill after the curettage Embolic infections seem to be usually secondary to and a result of curettage

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[1] Jobling James W and Petersen William The Nonspecific Factors in the Treatment of Disease THE JOURNAL A M A June 3 1916 p 1753

[2] Miller Joseph L. and Lusk Frank B The Treatment of Arthritis by the Intravenous Injection of Foreign Protein, THE JOURNAL A M A, June 3, 1916 p 1756

[3] Simpson F F Tr Am Gynec Soc 1909 and 1915

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Incision and Drainage of Inflammatory Exudates—This is a problem for judgment in some individual cases The indications depend on the probability as to whether it will increase or lessen the resisting forces of the body The solid inflammatory exudates encountered in puerperal cases should not be incised, as with incision secondary infections usually result, tending to interfere with and delay complete resolution Absorption of the exudate usually takes place rapidly after an immunity has resulted Modern ideas of infection and immunity are opposed to incision of acute pelvic exudates except in unusual instances The presence of pus in moderate quantities may have some value in supplying spontaneous autogenous vaccinations

In nonpuerperal cases incisions not only do not usually shorten the acute period of the disease, but often result in a persistent suppurating sinus that complicates abdominal sections which may become necessary later

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Dr E Hoeffer McMechan, Cincinnati A certain point made by Dr Watkins left me under the impression that etherization under any circumstances in association with acute infection, is always a very dangerous procedure and almost invariably involved a decrease in the protective immunity Much work has been done in recent years in connection with ether as a therapeutic agent and this work proves to my mind almost conclusively that ether used in a proper manner not only becomes an invaluable therapeutic agent in the control of infections, but infrequently if ever does any direct harm Gwathmey of New York found that ether-oil injection was almost a specific prophylactic against postoperative infection by the *Bacillus coli* I think that the use of liquid ether poured into the abdomen in acute infections is a therapeutic method which will come into general use Whether the value of the ether in this connection is due entirely to a peculiar antiseptic property, or whether it produces a certain condition which relieves the tension of peritonitis causing the acidosis, it is difficult to determine When we come to the toxic effects of infection we hold that for the acidosis during infection the prophylactic treatment consists in giving carbohydrates, fruit juices, alkaline waters with Fisher's solution intravenously, and in addition glucose-dextrose solutions Etherization is used in connection with oxygenization in order to prevent increased acidosis In order to eliminate the remnants of the anesthetic in the postoperative treatment we use the preoperative treatment of carbohydrates, alkaline waters, fruit juices etc We shall come to the conclusion that it is not the etherization that kills the patient but the infection The etherization conducted as I have outlined will prove an invaluable method because some of these complications cannot be handled under local anesthesia and in some nitrous oxid is not applicable Ether anesthetization will satisfy all demands and I hope that the oxygenation may be continued with this method

Dr J H Carstens Detroit If you have an infected uterus with placental tissue and decomposing membranes does anybody want to say it is a good thing to let it alone? I do not think so, I would take those out You need not scrape and leave a raw surface and open lymph channels to favor absorption, but you can just wipe it off, take pure phenol (carbolic acid), swab it out, destroying all the germs you can, cauterize the surface to prevent absorption, Nature will generally take care of any septic material in the blood That is the right way to treat such a case There is another type of case to which I have repeatedly called attention, a case in which there is no septic material in the uterus, the woman absolutely has no pain there is no exudate no swelling, the uterus is in a normal condition You ask the patient how she is and she says she feels fine You find that her temperature however is 106 to 107 F There is a condition I do not understand Some peculiar micro organism produces that high fever some different strain of streptococcus than we know It is not the ordinary kind In spite of all the swabbing and cleansing you may do the disease will run its course—four, six and eight weeks—or the patient will die in the meantime There is also another kind of case, in which pus gets into the tubes and the tubes do not close up or in which some of the septic material drops into the peritoneum There is a peritonitis with pus Perhaps there is a low grade of fever and this will remain as long as the pus is being absorbed The pus tube often drops into the culdesac Make an opening in the posterior wall of the vagina, drain the pus out and the patient will be well in a few days Still another kind of case is the one in which there has been a severe labor lacerated cervix tubes and uterus normal, but the woman has a septic infection from the lacerated cervix The infection spreads along the lymphatics and broad ligament outside the peritoneum and goes in the direction of least resistance sometimes running back over the crests of the ilium sometimes toward Poupart s ligament sometimes in the region of the appendix That is another kind of case—extraperitoneal, in the loose cellular tissue The woman will suffer from sepsis Make a good opening on the side going through the vagina, do not get into the peritoneal cavity Open and drain and the patient will get well In this kind of a case you can carry out conservative treatment others need surgery It is a question of what kind of a diagnostician you are

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INTESTINAL OBSTRUCTION [*]

JOHN WILLIAM DRAPER, M D
Fellow of the American College of Surgeons
NEW YORK

Intestinal obstruction is no longer an abstruse laboratory study, but a many-sided problem of quite as great interest and importance to the abdominal surgeon as to the surgical physiologist

This is a significant note, bearing on the growing value of surgical physiology to medical development in general and on the immediate importance of the new departments of comparative surgery and medicine Again, and from another standpoint, the broadening of this subject popularizes in our profession the biologic point of view, clearing the horizon as to the origin, relationship and destiny of man This emphasizes the geocentric as opposed to the homocentric conception of the universe in which we dwell It helps to teach the supreme fact that far from being the central pivot of interest and importance, man, like his kindred vertebrates, is relatively unimportant, a link only in the great chain of animal and vegetable life This has not, in the past, been the accepted doctrine and many of the medical prejudices and stumbling blocks with which we are beset have come from a failure to recognize man's place in nature

Is it not along these abstract lines of progress that we are led by experimental study to just as important truths as are to be found in the concrete methods of laboratory work? I often think that the one is sometimes lost sight of in the search for the other and that we are apt to lose much from the broader conception of life and its variations from our arbitrary normal in a too austere and exclusive dependence on purely *technical facts, particularly those relating to morphology*

I have said that today intestinal obstruction is of quite as much interest to the abdominal surgeon as to the surgical physiologist What are these points of interest and how has the correlation of interests come about?

There is a certain well-defined clinical syndrome which has been somewhat loosely defined as autointoxication So often is there a delay or at least an irregularity in the onward course of the intestinal contents that we are forced to concede a probable relationship between cause and effect The moment this is granted do not our abstract laboratory studies as to the cause of death in obstruction enter into very close applied relationship with this clinical syndrome? The question as to the origin of the toxemia in dogs assumes growing importance if proved to be allied to the etiology of constipation in man Lynch[1] has conclusively proved by careful study of the results of ileostomy upon numerous human beings that the amazing improvement noticeable in all these cases is due far more to a change in the biochemical conditions than to any mere relief of the intestine from mechanical work or to a drainage of intestine contents with bacteria and their products These contributions by Lynch on the terminal ileum and colon have greatly enhanced the value of the writer's studies on the stomach and duodenum, and have shown that the hope for future progress in understanding the alimentary canal in health and disease lies in considering it as a whole, rather than as separated by arbitrary morphologic barriers The researches of Barber[2] on the neuromuscular control are equally significant

No truer words relating to the alimentary canal have been written than by the surgical physiologist Sweet,[3] who says, in concluding one of the most scholarly papers that has yet appeared on intestinal obstruction

> We are aware that surgery already possesses a plethora of theories, but as long as a theory is given its proper valuation as a theory, as a working hypothesis, and is not accepted until supported by such an array of facts that the theory has itself become a fact, these theories offer the only means of progress in a field where so little is known

Feeding Experiments—For the past four years we have been interested in studying the effect on obstruction toxemia of feeding jejunal and ileal homologous epithelial cells to duodenally obstructed dogs Two reports have been made, both suggestive that some improvement in the obstructed animals resulted The series observed by us in the past year, however, and under like conditions fails to show any prolongation of life from the treatment In fact the average duration of life was less than in the control animals, thus casting doubt on the further value of this working hypothesis The result in this form of therapy is therefore still in abeyance

TABLE 1—DUODENALLY OBSTRUCTED DOGS FED JEJUNAL AND ILEAC MUCOSA 1016 SERIES

Dog Number	Average Pulse	Duration of Life Hours
110	133	119
111	133	46 30
124	178	69 30
136	169	68 30
137	161	90 30
138	170	142
161	183	72
162	188	70
216	175	47 30
217	177	119 30
Average	1 667 166 plus	845 84½

TABLE 2—DUODENALLY OBSTRUCTED DOGS

	1913 Series			1916 Mucosa Fed
	Mucosa Fed	Emulsion Fed	Controls	
Average pulse	156	157 4	156 3	166 7
Duration of life hours	164 8	104 4	88 5	84 5

Duration of Life in Esophageal and Gastric Occlusion—H H Janeway[4] in 1910 noted that esophageal obstruction often resulted in death without discoverable cause Of five dogs obstructed by us transpleurally in 1916 all died of empyema within three days, thus destroying our statistics in this field

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[*] From the Laboratory of Surgical Research New York University

[*] Read before the Section on Obstetrics Gynecology and Abdominal Surgery at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

[1] Lynch and Draper Developmental Reconstruction of the Colon Based on Surgical Physiology Ann Surg 1915 lxi 166 The Infected Colon and Its Surgery Med Rec New York 1915 lxxxvii 983 Anastalsis and Therapy of the Colon Am Jour Med Sc 1914 cxlviii 828 Lynch Draper and Lyon Contribution to the Surgical Physiology of the Colon Ann Surg 1915 lxii 441 The foregoing articles are contained in Surgical Pathological Physiology Volume I, New York University Draper J W Studies in Intestinal Obstruction THE JOURNAL A M A Sept 26 1914 p 1079 Lynch and Draper The Protective or Esoteric Symptoms of the Alimentary Canal Virginia Med Semi Month 1916 xx 601

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[2] Barber W Howard Dilatation of the Duodenum Ann Surg 1915 lxii 433 Surgical Pathological Physiology Volume I New York University

[3] Sweet Intestinal Obstruction, Ann Surg lxiii 720

[4] Personal communication to the author

On three dogs obstructed at different levels in the stomach, the following observations were made average duration of life, 116 hours, average pulse, 187 Clinically, these dogs differed widely from those obstructed in the duodenum There was no spasticity of the hind legs Vomiting was rare All signs pointed to a less acute intoxication Nevertheless, they died Our previous experiments have proved that dehydration is not a factor of any more importance in this than in toxemias due to other causes, and it is hard to understand how the duodenum can stand in causative relation, being aboral to the obstruction Still for all it may so stand The fact that obstruction anywhere aboral to the pharynx causes death is significant Eisberg has noted a ratio between gastro-esophageal and ileocolonic obstructions in relation to duodenal which we hope to report on later If confirmed this ratio will support our contention that the beginning and end of the canal have many points in common and that toxicity varies inversely with the digestive power

Effects of Introducing into the Peritoneal Cavity the Scraped Epithelium of Obstructed and Nonobstructed Dogs—The object of this was to determine if possible what change if any had taken place in the epithelium as regards toxicity, or whether any toxicity could be ascribed to the same cells under different conditions From cultures of the mucosa introduced in three cases only colon organisms were found Out of a series of ten dogs eight died of peritonitis, while two showed symptoms of duodenal obstruction, namely, hemorrhage from the rectum and tremors It is to be noted that the first is not a common symptom of duodenal obstruction, but has been observed by us to occur It is undoubtedly due to congestion of the rectum and colon from the elimination of toxins The results of this series are absolutely inconclusive, but an improvement in the technic might help We incline to the belief from these studies that the toxin is not in the cell itself, but is a product of its abnormal activity

Isolation of Intestinal Doubly Occluded Loop with Reconstruction of Alimentary Canal and Curettage of Epithelium, Having Cells within the Loop—In four out of five cases rupture occurred on the antimesenteric border There was great distention In two cases the loops were black, due either to gangrene or to autolysis The average duration of life was forty-eight hours The peritonitis was of the most virulent type There was much trouble with hemorrhage after the curettage Whipple's[5] technic of removal by sodium fluorid is evidently preferable The result of this series was negative

Thiry-Vella Fistulas, a Single Occluded Duodenal Loop, Drained Externally, Reconstruction of Canal—It is well known that animals so treated do not prosper After four or five days they show marked clinical signs of toxemia and a loss of weight They usually die soon after If curetted, these signs do not appear This is in accord with most other observers, but at variance with Murphy and Brody's findings

From six dogs, 1,000 c c of loop fluid was collected as follows double duodenojejunal occlusion and invagination of ends, loops about 25 cm long There was no difference in the rate of fluid accumulating in the loops, whether the continuity of the intestine were reconstructed or not, or whether gastro-enterostomy were done In all three types we had loops in which no fluid accumulated We are at a loss to explain why We did not interfere with the venous return

Attempts to save the animal's life by excision of the loop after the symptoms had developed and where reconstruction of canal had been done was futile except in one case A proteose was not found in the 1,000 c c referred to above Perhaps this was due to the fact that we used infusorial earth to hasten the alcoholic precipitation According to Whipple's technic it should have stood for twelve weeks With this exception the method used was the same as his The effect of injecting the final precipitate into one dog intravenously was very marked prostration, temperature of 105, no vomiting no diarrhea, no spasticity no convulsions or tremors There was recovery after twelve hours

We have noted the great difficulty in saving these animals after a doubly occluded duodenojejunal loop has been left in for more than thirty-six hours or often for less time This we have assumed to be due to an impairment of the functional power of the liver based on the studies of Schultz and the writer They noted a diminution in the camphor-glycuronic pairing power in the liver of duodenally obstructed dogs and assumed that this might also indicate decreased power to detoxicate autogenous duodenal toxins In such acute conditions as those under consideration there is no time for morphologic changes to show and the change in amount of liver fat is not a reliable index of the organ's protective efficiency

TABLE 3—NITROGEN RETENTION AND ALKALI RESERVE IN DOGS SUBJECTED TO INTESTINAL OBSTRUCTION

Normals	Nonprotein Nitrogen Mg per 100 C c	Creatinin Mg per 100 C c	Alkali Reserve per Cent
No 280	51.3	0.1	23
291	44.4	0.1	50
292	43.3	0.1	48
303	29.0	0.65	[illegible]
307	39.0	0.8	33
(Tumor of Spleen)			
(Encapsulated hematoma)			
Doubly obstructed duodenojejunal excluded loop			
Twenty four hours after operation			
No 281	52.3		52
298	47.3	0.1	[illegible]
299	41.4	0.1	61
Forty eight hours after operation			
No 298	63.1	0.3	60
299	82.8	[illegible]	43
304	85.0	1.00	57
305	101.0	2.00	

* As far as we have gone three things are noticeable First a rise in nonprotein nitrogen second a rise in creatinin third it seems to grow more alkaline These changes seem most noticeable after forty eight hours

Frazier and Peet[6] have introduced a most ingenious method to study this point, namely, an Eck fistula It is more accurate and less cumbersome than Tollen's glycuronic technic

Whipple in a comprehensive study of the subject has isolated a proteose from such doubly occluded loops This he considers to be the direct toxin from the mucosa and in this supports Roger, who some years since showed the presence of proteose

Sweet, while agreeing that the toxin undoubtedly originates in the cells of the duodenum, points out that an acceptance of the proteose hypothesis of Roger and Whipple entails a modification of our present understanding of protein digestion and gives strong proof of the toxic activity of the pancreas in intestinal obstruction He points out the clinical resemblance between acute pancreatitis and duodenal obstruction

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[5] Whipple and Stone Intestinal Obstruction Study of a Toxic Substance Jour Exper Med 1913 xvii 286

[6] Frazier and Peet Ann Surg June, 1916

CONCLUSIONS

The cause of death in intestinal obstruction is still unknown, but all recent studies point to aberrant activity of the duodenal and probably pancreatic cells The old hypothesis that the toxin is of bacterial or food decomposition origin may be looked on as discarded Dehydration is of no greater importance in this than in other toxemias

There is an important ratio between the toxicity of the intestinal epithelium and its digestive power

The intricate syndrome autotoxemia occurring in man will be better understood when we know the cause of death in duodenally obstructed dogs

I am indebted to Dr Gettler of the department of chemistry, New York University, for Table 3, which appears to show some interesting and constant changes in the blood of duodenally obstructed animals

ABSTRACT OF DISCUSSION

Dr H D Johnson, New York When the intestine is obstructed, death results from either water starvation, food starvation, or both, or from toxic absorption In my clinical work I have tried to differentiate these classes of cases and to treat them accordingly I have thought out some death lines I had a case of obstruction in the stomach at the pyloric end There was regurgitation of water and no toxic symptoms whatever so far as I could see I have not seen the high obstruction of which Dr Draper speaks The nearest approach to it was in a case in which there was obstruction at about 4 feet down the jejunum, in which the symptoms were those of acute toxemia as well as water starvation It is well to remember that these patients not only do not take water, but the water which they have is not utilized The toxic symptoms are less acute as you get away from the pylorus and into the region of the large intestine, where the toxic death line is very long delayed The point I would bring out is to provide drainage If you will make an end to side anastomosis and put in a rubber tube in these cases needing daily drainage you will produce a water-tight bowel anastomosis If you have not the proper tube, cut off a glove finger and make a water-tight joint between the glove finger and the intestine through which you may irrigate the bowel and through which gas may escape In one case of high obstruction I kept the patient alive for an indefinite period, feeding by rectum and through the anastomosis The tube should be dropped straight into the bowel so that there will be no angulation If normal action of the bowel is restored, either bv nature, or surgery, that fistula will not stay open

Dr C Hugh McKenna, Chicago About seven years ago, when Dr Draper first brought out his work on acute intestinal obstruction, Dr Bloodgood of Baltimore directed my attention to this work because I was somewhat interested in the clinical phase of the subject Having had one or two interesting cases in which I had performed enterostomy, I started some experimental work along the line suggested by Dr Draper, and since that time we have operated successfully in eight human cases of acute obstruction by performing a jejunostomy, preferably in the upper part of the jejunum These patients are operated on under local anesthesia The jejunum can be picked up without unnecessary manipulation of the gut, which is important, and an enterostomy is performed by attaching the intestine to the skin alone by Lembert sutures, making it for the time being hermetically sealed so that none of the secretions can run back into the peritoneal cavity It has been interesting to note that at the time of the resection of the bowel or closure of the fistula five or six weeks later, a small tip of gut was pulled off at right angles to the jejunum, so that for two weeks preceding the operation for closure practically the entire intestinal content continued down with very little passing out on the abdomen The welfare of the patient seems to be in proportion to the position of the opening in the small intestine, whether high up or low down, and the presence and amount of pancreatic secretion which is poured out on the skin of the abdomen is indicative of a high enterostomy Every abdominal surgeon will know this to be true In other words, the question of getting an enterostomy high up in the small intestine is the all-important part of the operation, just as has been proved by Dr Draper and other men doing this work In our experimental work the frequency of death was in proportion to the position at which the obstruction was caused From the work of Whipple and others, I am inclined to believe that the fatal factor in ileus is due to a normal physiologic intra-enteric secretion that comes probably from the duodenum and which, when the peristalsis of the intestine is interfered with sufficiently to block up this secretion, gives us one of the most powerful toxins, which condition if not corrected produces death To those who claim that we may gain results by placing a tube down through the stomach and into the duodenum for lavage, I wish to say that my clinical experience has taught me that there must be a permanent drainage until the normal tone of the duodenum and upper intestinal tract has been entirely restored

Dr John William Draper, New York It is very encouraging to those who spend a great deal of time in abstract studies to feel that the results will be of use in applied surgery Dr Johnson referred to water starvation It was with the hypothesis of water deprivation in relation to this toxemia that we performed the following experiments We took a series of dogs and gave them pilocarpin in very large doses We then suddenly obstructed a similar number The former lived, the latter died All tissues were then excised I cannot give the exact figures, but there was less than half the amount of water in the tissues of the pilocarpinized animals than in the animals dead with intestinal obstruction Although twice as dry, the pilocarpinized animals were clinically normal and healthy in every respect It is well known that with an increased water content, with dilution of the toxemia, any toxic animal will live longer Dr McKenna spoke of the desirability of draining away the material which has accumulated above the obstruction This is a subject in which I am much interested, but of which we know little I am, however, quite familiar with his work Statistics collected at the Johns Hopkins by McGlannan would seem to indicate that better results were obtained from such drainage, but it is about "fifty-fifty" It is quite conceivable that this material which everybody knows is very toxic may be of great value as a detoxinating agent for the host itself, although toxic to other individuals

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The Quantity of Light—The quantity and intensity of light may be considered in relation to the special place of work and to the surface on which the work is performed The quantity of light will depend on the source and the kind of light which is let into the factory, and the adequacy of light will also depend on the kind of material on which the work is performed Mr Wilson, who has made the light investigations for the factory department of England, distinguishes two kinds of work, which he names respectively inspective and detective, according as the work entails continuous application of the eye to one point or small area, or consists merely in keeping general watch over a given process, actual labor being demanded only when some fault occurs "The making up of clothing, handkerchiefs and typesetting' he says, "belong to the inspective class, while cotton and flax spinning and preparing belong to the detective class" The work of a watchmaker, jeweler, or draughtsman requires very much more light than the work of clothing or any needle workers The work of a hand typesetter, for instance, may also be divided into several kinds It requires more light to decipher some of the manuscripts which the typesetters have to set up, and certainly much more light than that which is necessary on the typestick itself Proofreading may require more light than any of those mentioned—George M Price, *The Modern Factory*

THE FRACTIONAL EXAMINATION OF THE STOMACH CONTENTS*

ELBRIDGE J BEST, B S, M D
SAN FRANCISCO

Today the accepted method of obtaining the contents of the stomach is by means of the stomach tube, a rubber tube usually of 34 F caliber and 80 cm long, with bulb and funnel attached It is a rather unpleasant event to the patient to have the tube in the throat, and, because of the unpleasantness, it cannot remain there any length of time It is almost ideal for removing the contents of the stomach and for lavage Also, because of its size and thickness, it can be used when the patient is decidedly unwilling For diagnostic purposes this large tube has its limitations After test meals it is used once, the accepted procedure being the removal of the stomach contents forty-five minutes after ingestion By measuring the volume of the obtained contents we assume we know the amount of meal and secretion still remaining in the stomach By titration we learn the concentration of acid present There are well founded objections to this method In the first place we may not obtain all of the stomach contents and, second, our chemical findings represent only one phase of the digestion Consequently we dare not make definite statements, from this one phase, regarding the behavior of the stomach

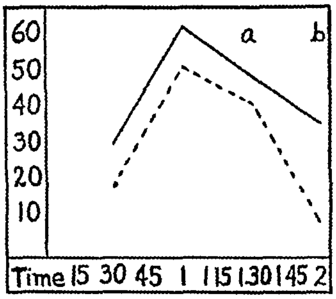

Chart 1 —Normal curve Digestion complete in two hours O P D 17312 *A* phenolsulphonephthalein + *b* secretion scanty phenolsulphonephthalein absent In the charts the solid line indicates the total and the broken line free hydrochloric acid

Because of the objections raised regarding this unsatisfactory method of learning what the stomach is doing, many variations have been adopted from time to time to offset them Some diagnosticians withhold opinion until several examinations have been made One method is to remove the contents at varying periods following the test meal, on successive days This procedure is less objectionable when the patient is in a hospital, but to have an ambulatory case return day after day is far from ideal

Our object is to obtain all possible information, and at the same time, cause the least amount of discomfort, loss of time and secondary injury to the patient The regular stomach tube does not answer these requirements

Recent work on the physiology of the stomach has given us more light on the normal, and better understanding of the pathologic We have been taught, from clinical findings, that hydrochloric acid is found in a normal stomach at about 0 2 per cent concentration, and that anything above this is to be considered as hyperchlorhydria Yet the careful work of Boldyreff[1] shows the true secretion from the stomach glands to be quite constant at 0 5 per cent hydrochloric acid concentration Why we do not find this high acidity normally, Boldyreff explains through a reflux of duodenal contents whose alkalinity quickly reduces the excess of acid Cannon[2] has shown the presence of a reflex at the pylorus which allows the pylorus to open and close, depending on the presence of free hydrochloric acid on the gastric or duodenal side Then there can be a nerve control over the stomach secretion governed by an optimum acid concentration point, as suggested by Mintz[3] This point can vary with the individual A quantity of food is introduced into the stomach The gastric glands have been previously stimulated through the taste (Pawlow,[4] Carlson[5]) The food dilutes the secretion, while the contained protein combines with the acid These two factors diminish the concentration of free hydrochloric acid As long as stimulation is present, the secretion of gastric juice continues The protein present increases the rate of secretion (McClendon[6]) Furthermore, the faster the secretion is produced, the higher is the concentration (Carlson[7]) Should the concentration exceed the high point for the particular stomach, a reflux of duodenal contents takes place to lower the acidity When no food is in the stomach the stimulation is lacking, and secretion ceases or is very small in amount Through a relaxed pylorus, duodenal contents may enter and keep the original high acid secretion down to the figures found in the contents of the resting stomach (Boas, 1889-1890, Boldyreff[8])

The nerve control may be deranged and cause various pathologic findings Inhibitory influences may be lacking and the secretion may continue after all food has left the stomach, or a derangement may take place which causes a failure in the response to the higher acid concentration, and the acidity approaches that of the pure juice This high concentration may be reached early in the digestion, for instance near the end of the first hour, and continue Or the highest point may not be reached for hours after the meal has been ingested

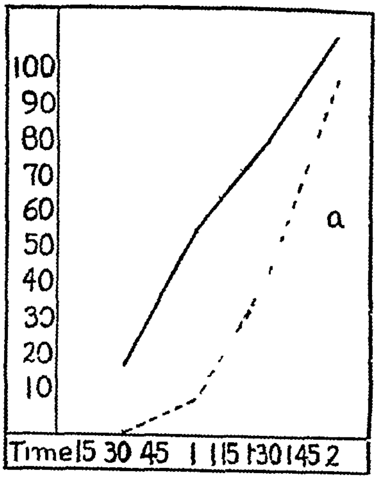

Chart 2 —Continuous secretion Duodenal ulcer O P D 18135 Free hydrochloric acid absent in thirty minutes *A* phenol sulphonephthalein +

The evidence obtained by physiologic workers, as Boldyreff,[1] and clinical observers, as Carlson,[5] shows the pure secretion from the gastric glands to contain 0 5 per cent hydrochloric acid On entrance into the stomach of 400 c c of water and masticated bread, as represented in an Ewald meal, it is readily seen how low the acid concentration will be at the beginning of digestion, through simple dilution As digestion continues, we have two factors which tend to increase the acidity, first, the highly acid secretion from the gastric glands and, second, the loss of certain amounts of stomach contents by passage of the chyme, at intervals, into the intestine Toward the end of digestion the acidity should decrease, owing to a diminishing activity of the gastric glands and reflux of alkaline duodenal contents

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* From the University of California Medical Clinic
[1] Boldyreff Quart Jour Exper Physiol 1914 viii 1
[2] Cannon Am Jour Physiol, 1907 xx, 283
[3] Mintz Russk Vrach 1915, xiv, No 14
[4] Pawlow The Work of the Digestive Gland, London 1910
[5] Carlson Am Jour Physiol 1915 xxxvi, 50
[6] McClendon Am Jour Phys 1915 xxxviii 191
[7] Carlson Am Jour Physiol 1915 xxxviii 248
[8] Boldyreff Ergebn d Physiol 1911 xi 121

The gastric contents then should show an ever changing picture of acidity, rising from very low concentration to an apex which should be constant for each individual stomach, and probably regulated by a complicated reflex mechanism, finally descending to a low acidity at the completion of digestion Such being the case, what information is obtained of the patient's condition, if we know that at forty-five minutes after an Ewald meal the free hydrochloric acid is at 40? To know our patient we should have a graphic picture of the stomach activity during the digestion period This can be obtained by plotting the concentration of acid at certain definite periods of time

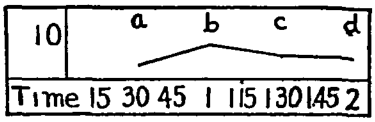

Chart 3 —Achylia phenolsulphone phthalein showing rapid motility O P D 13518 Free hydrochloric acid absent *A* mucus + + +, *b* phenolsulphone phthalein + mucus + + + *c* phenol sulphonephthalein absent mucus +, *d* mucus +

It becomes necessary to obtain and examine samples of the stomach contents at regular short intervals during the process of digestion Rehfuss[9] has called our attention to the use of the duodenal tube for this purpose He modified the tube somewhat, making a heavy metal tip with large openings to lessen the clogging of the openings with food The rubber tube is No 8 F, easily swallowed and retained, with practically no discomfort, over a period of hours Samples of the stomach contents can be removed every five, ten or fifteen minutes, and the chemical tests made and charted On coordinate paper, curves can be plotted which show graphically the ever changing picture of the stomach content This method opens up a wealth of possibilities We can study the variations in acidity in the normal stomach from beginning to end of digestion, note the entrance of duodenal contents, and follow the secretory activity of the abnormal stomach

In 1912, Ehrenreich[10] published an article on the examination of the stomach activity over a period of hours by means of a stomach tube remaining in position during that time He had previously used successive days, introducing the ordinary tube ten, twenty and thirty minutes later each day This had also been done by Ewald and Boas in 1885, Reichman in 1885, Rosenheim in 1888, Jackson in 1890, and Schule in 1895 The results were unsatisfactory in that they gave no real essential knowledge From Ehrmann,[11] Ehrenreich received the idea of using a long thin Nealton catheter, which Ehrmann used for duodenal feeding Later Ehrenreich discovered that Gross,[12] in 1893, had used a similar small tube in duodenal work and recommended it for diagnostic use in stomach examinations, but did not use it for that purpose

Ehrenreich gave the Ewald meal because of its extensive use, then introduced the small tube which remained during the test and, by means of a Politzer balloon and glass connecting tube, aspirated small quantities of the stomach contents at definite intervals He tested the acids and ferments of trypsin and pepsin Curves were plotted showing the increase and decrease of the acid concentration The apex of his curves was not always at sixty minutes In healthy stomachs this was frequently true, but with pathologic stomachs the high point was not reached sometimes until the two hour or three hour period These facts could not be discovered with the older method, and he strongly recommended the adoption of this technic in stomach clinics He found trypsin present regularly entering the stomach during digestion, and with the increase of trypsin a decrease of hydrochloric acid Mucus also played a part in lowering the acid content The presence of trypsin shows the duodenal contents to be normally regurgitated back into the stomach, and plays a definite part in the acid concentration

Skaller,[13] after reviewing the various methods of stomach examination and their limitations, described a method of using a duodenal tube 2 mm in diameter, with a metal tip, which he left in the stomach a distance of 50 cm from the teeth He removed a few cubic centimeters of stomach contents every five minutes, and tested the acid concentration He plotted curves of acidity over a period of sixty minutes

Skaller's qualifications for a test meal are (1) a homogeneous mass, liquid, (2) light, as is the Ewald meal, and (3) stimulating to the gastric secretion The one article that answers these requirements is Liebig's meat extract in water He gave 200 c c of water and 5 gm of meat extract The amount remaining in the stomach at the end of the hour is removed and measured Skaller does not consider this breakfast a substitute for the Ewald test meal, but finds it an admirable substitute for studying the secretory power of the stomach His findings show the fallacy of a single stomach test His results parallel Pawlow's findings with the blind pouch He does not mention Ehrenreich's work

In July, 1914, Skaller[14] demonstrated the use of his small tube before the Berlin Medical Society He mentions the work of Ehrenreich, but considers the Ewald meal and milk as a test meal not ideal Skaller used a small tube with a heavy metal tip, made of tantalum and heavy enough to reach and stay at the bottom of the stomach He again emphasizes the meat extract as ideal, answering all requirements By being colored, this meal can be used to determine when the stomach is empty, by the absence of the meal if the color is properly checked up He recommends using 25 drops of phenolphthalein solution to determine the motility Other advantages of the tube are the determining the presence of mucus and quantitative estimates of the stomach ferments Skaller does not discredit the old method of examination, but considers the fractional method a decided refinement and within the range of the busy practitioner

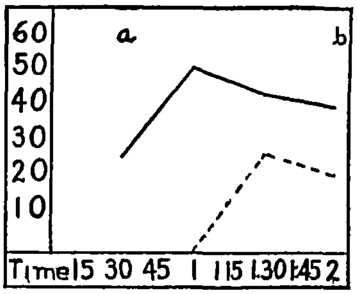

Chart 4 —Late appearance of hydrochloric acid with total acid curve of normal shape O P D 20085 Suspected gastric malignancy *A* mucus + + + *b* phenolsulphonephthalein +

Regarding the use of the small tube for the stomach examination, we have the following information Gross,[12] in 1893, mentioned the possible use of a small tube for stomach investigation Then Ehrenreich,[10] in 1912, received the idea from Ehrmann,[11] and put to a practical test a Nealton catheter Skaller,[13] in 1913, used a very small duodenal tube of 2 mm diameter with a metal tip Rehfuss,[9] in June, 1914, described his tube, the idea of which was suggested by Palefski Palefski used a soft rubber tube for duodenal work of No 8 F caliber, with a heavy metal tip weighing 105 grains and containing numerous perforations Rehfuss altered the tip by making slots of equal diameter to the rubber tube, which was No 8 F His tip weighed from 90 to 120 grains At about the same time Skaller,[14] in July, 1914, in an address, describes his tube, very similar to the Rehfuss tube He emphasizes the weight of the tip as very important for remaining at the bottom of the stomach Apparently his tip was perforated with small holes Other workers with the small tube and fractional examination of the stomach are Bondi,[15] Sybrandy,[16] Lanza,[17] and Egan [18] Egan used the small tube and fractional examination in conjunction with a barium meal and the Roentgen ray

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[9] Rehfuss Am Jour Med Sc June 1914
[10] Ehrenreich Ztschr f klin Med, 1912 lxxv 231
[11] Ehrmann Berl klin Wchnschr 1911 No 49 2226
[12] Gross New York Med Jour, Nov 18 1893
[13] Skaller Berl klin Wchnschr Nov 24 1913
[14] Skaller Berl klin Wchnschr, Feb 1 1915, p 105

Various test meals have been used in determining the gastric function, such as the Ewald meal of two slices of bread and two glasses of water, 200 c c of milk, the whites of two or three eggs, beef extract, 5 c c, in 200 c c of water, and a dry test meal These are all simple meals, easy to obtain, have an abundance of fluid, and save the dry meal, all of which are qualifications for a satisfactory test meal Ehrenreich[10] used various test meals and found striking differences in his results For instance, with the egg white meal he found the hydrochloric acid curve greatly changed and diminished and, in some cases, absent With the milk meal, his curves became extremely high, especially the total acid, showing an increased acid content Van Spanje[19] advocates a dry test meal in order to determine the actual secretion He gives a triscuit with no fluid, then what fluid is recovered is the pure gastric product Skaller[20] uses Liebig's beef extract and considers it ideal, as it answers all the requirements of an Ewald meal, contains nothing to clog the tube, and is a marked stimulant to the appetite through its tastiness Mintz[21] has also worked with meat extract meals Rosenheim[22] finds beef extract very reliable, but prefers the Ewald meal for all practical purposes

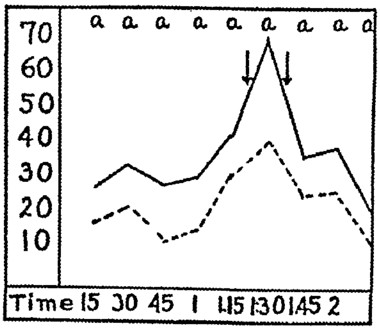

Chart 5 —Mr G Pain one and one half hours after eating Gastro enterostomy two years previous for gastric ulcer Bile present throughout a bile + Arrows indicate burning pain

We know that the extractives of meat are not foods It is true they stimulate pleasant sensations, but they are otherwise toxins to be eliminated as quickly as possible Their use in stomach work will call forth an appetite secretion, but does this give us a true picture of normal digestion? The Ewald meal is perfectly satisfactory in every way save in the possibility of particles stopping the tube and in its low protein content When the patient follows instructions and chews each mouthful well, the trouble with clogging is fairly eliminated This is especially true when the tip with large slit openings is used The universal use of the same test meal is necessary if we would accomplish uniform results Results are worthless for interpretation unless all factors are the same Years of experience have shown the value of the Ewald meal with the large tube Consequently it is to be strongly recommended as the test meal in making the fractional examination

To determine gastric motility, certain additions have been made to the test meal by various workers at various times Boas and Kemmerling[23] used chlorophyl The yellow color of the meat extract has been used [14] Skaller found that chlorophyl disturbed the acid determination He used phenolphthalein, adding 25 drops to the water or meat extract and testing the samples for the presence of phthalein by adding strong alkali The phthalein is quite harmless and does not interfere with any other color reaction When the test meal has entirely left the stomach, the phthalein will have left also This gives us a definite reaction for determining the emptying power of the stomach

The first part of our work on fractional examination of the stomach function was done with a small duodenal tube, of the Einhorn type, which had a perforated metal tip Occasionally difficulty was encountered in obtaining samples of the stomach content through plugging of the perforations in the metal tip This was especially true when thick, ropy mucus was present In due time a Rehfuss tube was received and the samples were obtained with greater ease, because of the wide slits in the metal tip in place of the small perforations Yet even with the wide openings, plugging will occur in rare cases

In order to obtain a fairly accurate picture of the chemical and physical activity of the stomach, over a definite digestion period, with a minimum loss of time and inconvenience to both patient and physician, we have found the following procedure to be very serviceable On an empty stomach, the patient is given a test breakfast consisting of two pieces of bread, with no crust, and two glasses of water to which 25 drops of phenolphthalein (1 per cent) have been added The patient chews the bread fine and takes the water along with the bread Before thirty minutes have elapsed the tube is passed This is done by having the patient open his mouth and say "ah" The metal tip is dropped behind the tongue, and the patient swallows To prevent gagging and retching, the patient takes deep breaths When this is done the tube can be passed to the 50 cm mark, with hardly an unpleasant sensation to the patient When down, the tube is kept to one side of the throat and causes very little annoyance During this period the patient can talk, read or devote his attention toward any minor employment, to pass the time Saliva is frequently abundant The patient is instructed to spit this out, not to swallow it Ehrenreich[10] found that patients would have from 50 to 100 c c of saliva

Samples of the stomach contents are removed in a half hour, one hour, one and one-half and two hours

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15 Bondi Arch f Verdauungskr 1913 xix 692
16 Sybrandy Nederl Tijdschr v Geneesk 1915 lx No 18
17 Lanza Riforma med Naples 1915 xxxi No 20
18 Egan Arch f Verdauungskr 1915 xxi 479
19 Van Spanje Nederl Tijdschr v Geneesk 1913 liii No 4
20 Skaller (Footnotes 13 and 14)
21 Mintz Deutsch Arch f klin Med 1912 cv Nos 5 and 6
22 Rosenheim Med Klin 1915 xi No 35
23 Boas Deutsch med Wchnschr 1912 xxxviii No 10 Kemmerling Arch f Verdauungskr 1914 xx 49

after starting the breakfast A "Triumph" syringe is used to exert suction, about 3 to 5 c c of contents are withdrawn, then several cubic centimeters of air are blown back by the syringe through the tube to prevent an error from unequal mixing of different samples The syringe is cleaned each time after a sample has been obtained The tube is easily removed When the metal tip reaches the pharynx, some resistance is met The patient is instructed to swallow, and moderate traction is exerted to cause the tip to slip into the mouth Of each sample, 1 c c, unfiltered, is titrated with hundredth normal sodium hydroxid, the Topfer method for determining hydrochloric acid and total acidity being used The results are charted on coordinate paper, and lines connecting the points give us a graphic picture of the stomach contents during digestion By adding alkali to the two hour sample the presence or absence of phenolphthalein is shown, which gives us information regarding the motor power of the stomach The presence of phenolphthalein indicates the presence of the original meal still in the stomach It has been shown by Seidel[24] that unfiltered stomach contents give more accurate acid results, unless mucus is present In the latter case, the stomach contents should be filtered

We have, then, a procedure which gives us information on the digestive cycle, very simple in execution It is a method which can be handled perfectly by a nurse and not too exacting in its demands on the patient It is an examination to be used not only in specially selected cases, but also as a routine in all gastric complaints It can be used by the general practitioner as easily as in the teaching hospitals

Further reports will be necessary from many careful workers, for the more accurate interpretation of the graphic curves A great many cases must be examined, and the latter findings at operation, necropsy, etc, must be added to prove the real value of our results If one looks over a large number of curves, certain features stand out prominently The healthy stomach usually gives a curve that rises to its apex in one hour and descends to a low point in two hours (Chart 1) The hydrochloric acid curve is symmetrical with the total acid and usually within 20 of the total concentration A continuous secretion curve (Chart 2) rises steadily to two hours and, if followed longer is found to stay high, making a plateau over a long period In pure achylia, the constant absence of free hydrochloric acid is found, while the total acid curve holds a fairly level course (Chart 3) Other cases are found that have no free hydrochloric acid at certain periods, yet free acid is present at others (Chart 4) In view of the fact that many statements have been made regarding the pain in gastric ulcer being due to high concentration of acid, it is interesting to note that in a case of gastric ulcer two years following a gastro-enterostomy, pain was felt one and one half hours after eating, readily relieved by alkalies The curve of acidity (Chart 5) shows not only no hyperacidity but barely the normal concentration The late apex was reached at the time of pain and relief was experienced with the fall of acidity

It is hoped this summary of later work on stomach examination will help to bring this very satisfactory fractional method of investigation more strongly to the attention of physicians, that it may be adopted universally resulting in more accurate diagnosis

240 Stockton Street

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[24] Seidel Arch f Verdauungskr 1915 xxi No 3

TRICHINOSIS

IMMEDIATE RESULT FOLLOWING INTRAVENOUS INJECTION OF NEOSALVARSAN

J B McNERTHNEY, M D
AND
WILLIAM B McNERTHNEY, M D
TACOMA, WASH

In the past it has been doubtful whether any direct measures have had beneficial influence in arresting the trichinae, after the muscles have once been invaded It has been simply a Verdun conflict of the mastery between the strength of the patient and the life of the trichinae, securely entrenched in nearly every tissue, even to spinal fluid, as was first demonstrated by Van Cott and Lintz,[1] and later confirmed by Bloch[2] and Elliott [3]

H R, German aged 33, entered St Joseph's Hospital July 30, 1915 While watchman for a cold storage plant he had eaten for some days undercooked ham Before entering St Joseph's Hospital, he had been in another institution in a different part of the state, since the date of his infection The nature of the treatment we were unable to ascertain He was rapidly getting worse and was brought to the hospital on a stretcher

The patient in his fifteenth week of disease was greatly emaciated and severely prostrated, having lost 60 pounds The temperature was 100 The forearms were flexed on the arms and there was restriction of the wrist joints so marked that he was unable to lift a cup or feed himself There was rigidity of the muscles of the neck and deglutition was difficult The chest muscles appeared free The abdomen was tender to touch with rigidity of the rectus muscle The Kernig sign was present The patellar reflex was absent The hip joints were extremely painful and the lower limbs showed a cyanosis and edema Owing to the long confinement the patient had sores It was apparent that he was suffering from a severe type of anemia, and a blood examination at this time showed Erythrocytes, 3,000,000, hemoglobin 55 per cent , leukocytes, 30 000 differential count neutrophils, 58 per cent lymphocytes, small and large, 7 per cent , eosinophils, 35 per cent

A section of muscle fibers was removed from the lower third of a biceps muscle, and numerous living trichinae showed in every field The cerebrospinal fluid or blood was not examined for trichinae

Fortunately for our patient, we were unaware of the use and results of neosalvarsan in trichinosis, as reported by Van Cott and Lintz Independently we realized our utter helplessness with the usual therapy, and decided to use intravenously 0 06 gm of neosalvarsan During its administration he became slightly cyanosed and it was followed by a marked chill Within forty eight hours the patient felt less pain than he had for months, and was soon able partially to extend his forearms Within one week he was in a chair and able to sit in an automobile, and left the hospital Aug 9, 1915 Fourteen days after intravenous injection he was able to walk with crutches, and three weeks later he discarded his crutches and went on to an uninterrupted recovery

The scientific paper and work of Van Cott and Lintz and their unfavorable results in the use of salvarsan and neosalvarsan would make us slow to use neosalvarsan However, in our case, we were rewarded with a most favorable result, which seems to prove beyond a doubt that in certain stages of the disease, at least, neosalvarsan intravenously is a rational method of treatment in trichinosis

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[1] Van Cott J M and Lintz William Trichinosis The Journal A M A Feb 28 1914 p 680

[2] Bloch, Leon Trichinosis The Journal A M A Dec 18 1915 p 2140

[3] Elliott A R Trichinosis The Journal A M A Feb 12 1916 p 504

BLOOD CULTURES IN EPILEPSY *

WILLIAM B WHERRY, M D
AND
WADE W OLIVER, M D
CINCINNATI

In cultures from the blood of the following six cases of epilepsy we have failed to isolate the organism described by C A L Reed[1] as the *Bacillus epilepticus*

Dr Reed gave us one of the cultures isolated by Dr Hyatt from a case (S) As far as we could tell, this organism belonged to the *B subtilis* group Its morphology is well shown in the photomicrographs published by Dr Reed in the article cited It varied in its reaction to Gram's stain according to the medium on which it was cultivated In size it resembled *B subtilis* and formed terminal and subterminal spores which, when mature, were almost central It grew rapidly at 37 C or 24 C with a smooth or wrinkled dirty white layer on any of the ordinary mediums Blood serum was rapidly digested, as was also the casein clot in milk Acid was produced from dextrose, levulose, galactose, saccharose and mannite We decided to test its pathogenicity after we had proved to our satisfaction that it really could be isolated from the blood of epileptics

Dr Reed kindly offered to allow us to make cultures in his cases, which was done by us in four cited below in conjunction with his bacteriologist, Dr Hyatt Not only could we not isolate such an organism but also we failed to find any bacteria in smears stained by the Giemsa stain and by Abbott's spore stain and other methods Dr Hyatt showed us a blood smear containing the "spores" of *B epilepticus* We were not able to pass on the nature of these bodies, which were about the size of the spores of *B subtilis* We will only say that we have been unable to find similar bodies in smears made by us Our reason for limiting ourselves to the study of a few cases was influenced not only by the pressure of other work, we also hoped that by the use of special mediums, which we had found suitable for the growth of many delicately growing parasites, we might be able to isolate something overlooked heretofore

We submit the following condensed notes on the cases in which we made cultures

Case 1—Mr B, Cincinnati General Hospital, was referred to us by Dr Reed as particularly favorable on account of the frequent attacks of grand mal Three separate blood cultures were made

(*a*) Feb 24, 1916 5 c c. of blood were taken between the frequent attacks and distributed in two flasks of + 1 broth and several deep tubes of + 1 glucose agar These all remained sterile and were discarded after fifteen days' incubation at 37 C

(*b*) March 6 10 c c of blood were drawn one hour after a typical attack of grand mal in which the patient fell down and injured himself The blood was immediately distributed among four flasks each containing 400 c c + 1 broth, 2 deep tubes of + 0 5 Martin's medium, two deep tubes of + 2 0 Martin's medium, and six tubes of + 0 5 Martin's medium which were solidified in the slanting position and two of these were made anaerobic. These all remained sterile during two weeks' incubation at 37 C Some of the sediment from the flasks was transplanted to + 1 maltose and + 1 human blood agar slants on the third day, but these subcultures too remained sterile

(*c*) On the afternoon of March 6, the patient had a seizure, and while he was on the floor, Dr Betzner drew 10 c c of blood and defibrinated it This was distributed in flasks of + 1 broth and + 1 glucose broth and deep tubes of Martin's medium After a month's incubation a few colonies of staphylococci were detected in some of the deep tubes of Martin's medium The + 1 broth flasks remained sterile, but a staphylococcus and a peculiar clostridium were isolated from the glucose-broth-blood culture The clostridium multiplied very slowly in the blood sediment, and proved to be a partial tension organism We have described its isolation in an article which is shortly to appear[2] We subsequently encountered an aerobic strain of the same organism in a glucose-broth-blood culture in a case of phlebitis Investigations showed that the clostridium had extremely resistant spores and probably came from the glucose

After this we took care to autoclave all the mediums used in the following cultures ourselves

Case 2—Mrs H, Cincinnati General Hospital, was referred to us, February 28, by Dr Roger Morris and Dr T H Kelly Blood was drawn from an arm vein two hours after a typical attack of grand mal Five c c of blood were distributed in three aerobic agar plates, in four deep tubes of + 0 5 Martin's medium, and in three flasks of + 1 broth and one flask of + 1 dextrose broth These were incubated at 37 C All these cultures remained sterile during twenty-two days' observation

Case 3—From Miss G R, aged 15, one of Dr Reed's grand mal patients, from a private hospital, April 12, with Dr Hyatt, we drew 10 c c of blood from an arm vein About 5 c c of this were immediately distributed in one deep tube of + 0 5 Martin's medium, two flasks containing 600 c c of + 1 broth each and 1 flask containing 600 c c of + 1 glucose broth, and into three + 1 agar plates The other 5 c c of blood were hemolyzed in sterile distilled water and taken back to the laboratory, where it was sedimented at high speed and the washed sediment and supernatant fluid planted in a variety of mediums In all sixteen aerobic and anaerobic cultures were made in + 1 glycerin agar, + 0 5 Martin's medium, Martin's medium made up with monosodium phosphate, + 0 5 Martin's pleuritic and on + 1 human blood agar slants

All of these cultures remained sterile during twenty-six days' observation, excepting that eight superficial colonies of *Staphylococcus albus* appeared on one of the + 1 agar plates This was discarded as an apparent contamination, as the room in the hospital in which the plates were made was dusty and drafty

Case 4—Mr L, aged about 45 one of Dr Reed's cases, from a private hospital, had petit mal, but "has been growing worse" April 12, cultures were made from 10 c c of blood drawn at the same time and place as in Case 3 Cultures were distributed in the same way and in the same mediums One plate showed a superficial colony of a large coccus The rest of the cultures remained sterile as in Case 3

Case 5—From Miss A E who had nocturnal attacks referred by Dr C A L Reed April 16, various types of mediums were inoculated with 10 c c of blood and incubated aerobically, at partial tension, and anaerobically with negative results during eight days' observation About 2 5 c c of the blood was inoculated into ten tubes of + 1 broth Four of the tubes belonged to Dr Hyatt These we divided between us Ours, including two of Dr Hyatt's broth tubes remained sterile Dr Reed later informed us that Dr Hyatt had isolated the *Bacillus epilepticus* from one of the tubes taken by her

Case 6—Mr A, from the Jewish Hospital, one of Dr Reed's patients, April 25, 1916 Dr Reed notified us, was a favorable case We could not go ourselves to collect the blood, but Dr Hyatt kindly collected about 5 c c in sterile sodium citrate solution (1 5 per cent furnished by us) Some of the blood had been discharged into tubes of plain broth (made by Dr Hyatt) Two of these inoculated broth tubes were turned over to us for observation The citrated blood was centrifuged The citrate plasma was removed and the sediment hemolyzed with distilled water The hemolyzed sediment and plasma were then centrifuged at high speed for one hour and the sediments planted in deep tubes of + 0 3 and + 1 0 Martin's medium containing sterile pleuritic fluid Two plates of combined sediments were made, one was kept aerobic and the other at partial tension at 37 C All the cultures showed no growth during two weeks' observation

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* From the Department of Bacteriology in the University of Cincinnati Cincinnati General Hospital

[1] Reed C A L The Bacillus Epilepticus The Journal A M A, May 20 1916 p 1607

Note—We have for publication next week a paper by Dr W B Terhune of the East Louisiana Hospital for the Insane giving his results, which apparently confirm Dr Reed's claims as to the causative agent of epilepsy also a comment by Dr Reed on this article and the one by Caro and Them which follows

[2] Wherry W B, and Oliver, W W Jour Infect Dis to be published

A BACTERIOLOGIC STUDY OF THE BLOOD OF SEVENTY EPILEPTICS

WITH SPECIAL REFERENCE TO THE BACILLUS EPILEPTICUS OF REED *

H CARO, M D
PALMER, MASS
AND
D A THOM, M D
Assistant Pathologist, Massachusetts State Board of Insanity
WORCESTER, MASS

The obscurity surrounding the fundamental causes of so complex a group of neurologic disorders as the epilepsies will, in itself, bring forth from time to time many new observations, both etiologic and therapeutic in nature Recently, Dr C A L Reed of Cincinnati has written concerning the isolation of an organism believed by him to be the cause of the convulsion in so-called "idiopathic epilepsy" The value of such an observation can hardly be overestimated, particularly since it contains vast possibilities in the opening up of a new field of therapeutic endeavor Accordingly, we felt it to be essential that this work should be corroborated, merely from the point of view of recovering the organism from the blood of epileptic patients

A brief summary of Dr Reed's work will aid in the presentation of the results of our investigations In February, 1915, Dr Reed[1] stated that "the role of constipation as a causative factor in epilepsy is due to the more than probable fact that the initial cause is to be found in a specific infection" So convincing was this conclusion that he felt the necessity of stating that it was probably a bacillus of the gas-forming group, which, together with its toxins, had the faculty of accumulating in the tissues and in the blood

Following this hypothesis, Dr Reed[2] reported the finding of a specific organism as the cause of "idiopathic epilepsy," which he believed to be the epilepticoccus This organism consisted "of granular bodies, sometimes arranged in diplococci, sometimes in chains, sometimes in clusters, while in certain cases all these forms were present in a single case" It was to be found in the blood either just before or just after a seizure, but in the interim it disappeared Growth of the coccus occurred readily on ordinary mediums, and animal experimentation fulfilled the third of Koch's laws In conclusion, the presence of the epilepticoccus was stated definitely to be pathogenic for the disease

In a later communication, Dr Reed[1] stated that "epilepsy is an infection depending on a definite spore-bearing organism — the *Bacillus epilepticus*" The discarding of the epilepticoccus was explained briefly (in a footnote) on the basis of the changing morphology of the bacillus, as shown at different stages of its development This had given rise to some confusion, and the discredited researches of Bra are quoted in defense of this change in the causative agent In this paper, it was stated that cultures from the blood of epileptics showed the organism present in a large number of cases, more abundant immediately preceding or during a convulsion, although frequently found at other times, and, less readily, in "long interval" cases The duration of the disease had no influence, apparently, on the finding of the bacillus, for mention is made of a case of more than twelve years' duration in which cultures were found positive The organism was said to grow slowly in bouillon or on agar-agar (taking from two to five days), and to stain best with carbolfuchsin, although other stains could be employed Finally, injection of pure cultures of the organism into rabbits was stated to produce a syndrome analogous to epilepsy in man

Brief mention of the work of Bra may not be inadvisable at this point In 1902, she[3] described the neurococcus as the essential cause of epilepsy Besta, working in the laboratory of Ceni, failed to find the organism in a total of 375 cultures, of which 370 were sterile, the remaining five being contaminated Ghiliarowsky of Moscow found the organism in insane patients (not epileptic), and concluded that it was a contamination The following year, Tirelli and Brossa examined a total of fifty-eight cultures with negative results Lannois and Lesieurs of Lyons also were unable to find the neurococcus

With these facts in mind, we began an investigation along the lines taken by Reed and his assistants In all, seventy cases of clinically idiopathic epilepsy, without any demonstrable organic lesion, have been studied In this group were included forty-seven women and twenty-three men In fifty-five of these patients no exciting cause could be found In fourteen cases the exciting cause was given as pregnancy, 2, pneumonia, 1, scarlet fever, 1, dentition, 3; indigestion, 3, pertussis, 2, rachitis, 1, and measles, 1 In this group, one case (blood taken during status) was included in which the assigned cause was given as "head injury," but necropsy failed to reveal any lesion of the calvarium or brain structures The age of onset of the disease varied from infancy to 41 years (Table 1) The age at time of first known convulsion is here taken as the age of onset

TABLE 1—AGE OF ONSET

Age	Number of Cases
Before end of first year	8
Between age of 1 and 5	14
Between age of 6 and 10	24
Between age of 11 and 15	13
Between age of 16 and 20	4
Between age of 21 and 30	6
Between age of 41 and 45	1
Total	70

The duration of the epilepsy was from three to forty-five years, periods of remission, no matter what their length, are included in the duration (Table 2)

In regard to the incidence of constipation, on which Reed laid considerable stress, it was found that all of the seventy patients were suffering in varying degrees from this complication

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* From the laboratory and wards of the Monson State Hospital (for Epileptics) Palmer Mass

[1] Reed C A L The Bacillus Epilepticus Third Report The Journal A M A May 20, 1916, p 1607

[2] Reed C A L Diagnostic Methods and Pathologic Constants in Idiopathic Epilepsy The Journal A M A, Jan 29 1916 p 336

[3] Bra Recherches microbiologiques sur l epilep ie

Our routine method of examination consisted in the withdrawal of from 5 to 10 c c of blood from the median basilic vein The blood flowed directly from the needle through a glass tube (connected to the needle by a short piece of rubber tubing) and into a test tube (200 by 20 mm) holding 2 c c of a solution containing 0 6 per cent sodium chlorid and 1 5 per cent sodium oxalate The oxalated blood was planted immediately on agar-agar slants and in bouillon Each culture tube was inoculated with 1 c c of blood The incubated cultures were not examined until the fifth day, unless a growth was noted on the agar slants, or turbidity of the bouillon occurred before that time All apparatus used was subjected, for twenty minutes, to a temperature of 250 F under 15 pounds' pressure

TABLE 2—DURATION OF EPILEPSY

Duration Years	No of Cases
1 to 5	8
6 to 10	15
11 to 15	13
16 to 20	6
21 to 30	22
31 to 40	5
41 to 45	1
Total	70

In all, eighty specimens of blood were obtained, ten of our cases were repeated The total number of cultures was 160 Table 3 shows the relation of the specimens taken to the time of convulsions

TABLE 3—RELATION OF SPECIMENS TO TIME OF CONVULSIONS

When Taken	Number
During status	4
At cessation of grand mal seizure	10
At cessation of petit mal seizure	2
Within one hour after last seizure	29
Between 1 and 2 hours	10
Between 2 and 3 hours	6
Between 3 and 4 hours	2
Between 4 and 5 hours	3
Between 5 and 6 hours	2
Between 6 and 7 hours	1
Between 7 and 8 hours	3
Between 8 and 9 hours	1
Between 9 and 12 hours	3
Between 12 and 24 hours	1
None for several days	3
Total	80

The specimens obtained at cessation of grand mal seizures were taken as soon as the convulsive movements of the arms had quieted sufficiently to allow venipuncture to be performed In the other cases, from one to eight grand mal seizures preceded the taking of the specimen Two of the three patients free from seizures for several days were examined again at intervals of fifteen minutes and two hours, respectively, following a single grand mal seizure

Examination of these cultures showed that 156 were sterile Smears were made from every culture incubated, the lack of growth on the agar slant or clearness of the bouillon not preventing such procedure Of the four cultures that showed growths, one (taken five hours after a grand mal seizure) showed staphylococci in bouillon Another specimen of this patient's blood, obtained ten minutes after the last of a series of five seizures, gave sterile cultures on agar and in bouillon The other three cultures all showed a similar organism On a Petri dish (blood taken five hours after seizure), two colonies were found outside the areas over which the blood had spread In the second case (taken twelve hours after a seizure), a similar colony was found on an agar-agar slant In the third (taken during a grand mal seizure), a scanty growth was found in bouillon All of these growths were found before the third day of incubation With methylene blue as a stain, the organism was found to be a very large oval-shaped bacillus, with deeply staining ectosarc and pale staining protoplasm It grew rapidly on agar-agar slants, and was distinctly fungoid in appearance Injections of pure cultures, both intravenously and intraperitoneally, into a rabbit failed to produce any systemic disturbance, and ten days after the last injection the animal was returned to its mates Feeling that this was a contamination, Petri plates were placed about the laboratory, and a similar organism was isolated Fortunately, at about this time, Dr Reed sent us a subculture of *Bacillus epilepticus* Examination of specimens from it showed an entirely different organism from the contamination described above All three of these cases were repeated either during or within fifteen minutes after the cessation of a grand mal seizure, and the cultures were found to be sterile

In addition to the foregoing group of cases, two patients with hemiplegia were examined, one the day following the seizure and the other at the cessation of a convulsion These cultures were sterile Similar results were found in two cases with myoclonus Both specimens were taken within a half hour after a grand mal seizure

In a personal communication, Dr M M Canavan[4] assistant pathologist to the Massachusetts State Board of Insanity, has given us the results of postmortem cultures from seventeen epileptics on whom necropsies were held during the past year In every instance, from two to seven loci were studied for bacteriologic infection, and these have included always the heart's blood In three of these cases, all cultures were found to be sterile, a total of thirteen loci being studied In the remaining fourteen necropsies, with a total of seventy loci investigated, Dr Canavan was unable to find any organism approaching the morphology of *Bacillus epilepticus* as described by Dr Reed

SUMMARY

1 In a series of seventy cases, with a total of 160 blood cultures, there were 156 sterile cultures The remaining four showed contaminations

2 Four cases with either myoclonus or hemiplegia also gave sterile blood cultures

3 In a series of seventeen necropsies on epileptics, Dr Canavan, in a bacteriologic study, was unable to find any organism resembling *Bacillus epilepticus*

4 In conclusion, it would seem evident that, in the seventy epileptic patients studied, the epileptic syndrome was not due to the *Bacillus epilepticus* of Reed

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New Method of Antral Cleaning with Trochar—For some time it has been my practice after insertion of a trochar through the wall of the inferior meatus into the antrum of Highmore to proceed as follows The point of the trochar is turned downward so that it comes as near the floor of the antrum as possible Both nostrils are then closed around the trochar tube with the finger, and the patient blows forcibly This puts air pressure via the ostium maxillaris into the antrum and forcibly blows out the pus through the cannula It is much better to use a cannula of good size and one has to manipulate it a few times to be sure the inner end is free I believe that this method practically empties the antrum of fluid which the ordinary method with a trochar does not do—A C Heath, M D, St Paul favorable case We could not go ourselves to collect the blood, but Dr Hyatt kindly collected about 5 c c in sterile *sodium citrate solution* (1 5 per cent furnished by us) Some of the blood had been *discharged into tubes of plain* broth (made by Dr Hyatt) Two of these inoculated broth tubes were turned over to us for observation The citrated blood was centrifuged The citrate plasma was removed and the sediment hemolyzed with distilled water The hemolyzed sediment and plasma were then centrifuged at high speed for one hour and the sediments planted in deep tubes of + 0 3 and + 1 0 Martin's medium containing sterile pleuritic fluid Two plates of *combined sediments* were made, one was kept aerobic and the other at partial tension at 37 C All the cultures showed no growth during two weeks' observation

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[4] Personal communication from Dr Canavan to Dr Thom dated June 29 1916

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Following this hypothesis, Dr Reed[2] reported the finding of a specific organism as the cause of "idiopathic epilepsy," which he believed to be the epilepticoccus This organism consisted "of granular bodies, sometimes arranged in diplococci, sometimes in chains, sometimes in clusters, while in certain cases all these forms were present in a single case" It was to be found in the blood either just before or just after a seizure, but in the interim it disappeared Growth of the coccus occurred readily on ordinary mediums, and animal experimentation fulfilled the third of Koch's laws In conclusion, the presence of the epilepticoccus was *stated definitely to be pathogenic for the disease*

In a later communication, Dr Reed[1] stated that "epilepsy is an *infection depending* on a definite spore-bearing organism — the *Bacillus epilepticus*" The discarding of the epilepticoccus was explained briefly (in a footnote) on the basis of the changing morphology of the bacillus, as shown at *different* stages of its development This had given rise to some confusion, and the discredited researches of Bra are quoted in defense of this change in the causative agent In this paper, it was stated that cultures from the blood of epileptics showed the organism present in a large number of cases, more abundant immediately preceding or during a convulsion, although frequently found at other times, and, less readily, in "long interval" cases The duration of the disease had no influence, apparently, on the finding of the bacillus, for mention is made of a case of more than twelve years' duration in which cultures were found positive The organism was said to grow slowly in bouillon or on agar-agar (taking from two to five days), and to stain best with carbolfuchsin, although other stains could be employed *Finally, injection* of pure cultures of the organism into rabbits was stated to produce a syndrome analogous to epilepsy in man

Brief *mention of the work of Bra* may not be inadvisable at this point In 1902, she[3] described *the neurococcus* as the essential cause of epilepsy Besta, working in the laboratory of Ceni, failed to find the organism in a total of 375 cultures, of which *370* were sterile, the remaining five being contaminated Ghilarowsky of Moscow found the organism in insane patients (not epileptic), and concluded that it was a contamination The following year, Tirelli and Brossa examined a total of fifty-eight cultures with negative results Lannois and Lesieurs of Lyons also were unable to find the neurococcus

With these facts in mind, we began an investigation *along the lines taken by* Reed and his assistants In all, seventy cases of clinically idiopathic epilepsy, without any demonstrable organic lesion, have been studied *In this* group were included forty-seven women and twenty-three men In fifty-five of these patients no exciting cause could be found In fourteen cases the exciting cause was given as pregnancy, 2, pneumonia, 1, scarlet fever, 1, dentition, 3, indigestion, 3, pertussis, *2*, rachitis, *1*, and *measles*, 1 In this group, one case (blood taken during status) was included in which the assigned cause was given as "head injury," *but necropsy failed to reveal* any lesion of the calvarium or brain structures The age of onset of the disease varied from infancy to 41 years (Table 1) The age at time of *first known convulsion* is here taken as the age of onset

TABLE 1—AGE OF ONSET

Age	Number of Cases
Before end of first year	8
Between age of 1 and 5	14
Between age of 6 and 10	24
Between age of 11 and 15	13
Between age of 16 and 20	4
Between age of 21 and 30	6
Between age of 41 and 45	1
Total	70

The duration of the epilepsy was from three to forty-five years, periods of remission, no matter what their length, are included in the duration (Table 2)

In regard to the incidence of constipation, on which Reed laid considerable stress, it was found that all of the seventy patients were suffering in varying degrees from this complication

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* From the laboratory and wards of the Monson State Hospital (for Epileptics) Palmer Mass

[1] Reed C A L The Bacillus Epilepticus Third Report The Journal A M A May 20 1916, p 1607

[2] Reed C A L Diagnostic Methods and Pathologic Constants in Idiopathic Epilepsy The Journal A M A Jan 29 1916 p 336

[3] Bra Recherches microbiologiques sur l epilepsie

Our routine method of examination consisted in the withdrawal of from 5 to 10 c c of blood from the median basilic vein The blood flowed directly from the needle through a glass tube (connected to the needle by a short piece of rubber tubing) and into a test tube (200 by 20 mm) holding 2 c c of a solution containing 0 6 per cent sodium chlorid and 1 5 per cent sodium oxalate The oxalated blood was planted immediately on agar-agar slants and in bouillon Each culture tube was inoculated with 1 c c of blood The incubated cultures were not examined until the fifth day, unless a growth was noted on the agar slants, or turbidity of the bouillon occurred before that time All apparatus used was subjected, for twenty minutes, to a temperature of 250 F under 15 pounds' pressure

TABLE 2—DURATION OF EPILEPSY

Duration Years	No of Cases
1 to 5	8
6 to 10	15
11 to 15	13
16 to 20	6
21 to 30	22
31 to 40	5
41 to 45	1
Total	70

In all, eighty specimens of blood were obtained, ten of our cases were repeated The total number of cultures was 160 Table 3 shows the relation of the specimens taken to the time of convulsions

TABLE 3—RELATION OF SPECIMENS TO TIME OF CONVULSIONS

When Taken	Number
During status	4
At cessation of grand mal seizure	10
At cessation of petit mal seizure	2
Within one hour after last seizure	29
Between 1 and 2 hours	10
Between 2 and 3 hours	6
Between 3 and 4 hours	2
Between 4 and 5 hours	3
Between 5 and 6 hours	2
Between 6 and 7 hours	1
Between 7 and 8 hours	3
Between 8 and 9 hours	1
Between 9 and 12 hours	3
Between 12 and 24 hours	1
None for several days	3
Total	80

The specimens obtained at cessation of grand mal seizures were taken as soon as the convulsive movements of the arms had quieted sufficiently to allow venipuncture to be performed In the other cases, from one to eight grand mal seizures preceded the taking of the specimen Two of the three patients free from seizures for several days were examined again at intervals of fifteen minutes and two hours, respectively, following a single grand mal seizure

Examination of these cultures showed that 156 were sterile Smears were made from every culture incubated, the lack of growth on the agar slant or clearness of the bouillon not preventing such procedure Of the four cultures that showed growths, one (taken five hours after a grand mal seizure) showed staphylococci in bouillon Another specimen of this patient's blood, obtained ten minutes after the last of a series of five seizures, gave sterile cultures on agar and in bouillon The other three cultures all showed a similar organism On a Petri dish (blood taken five hours after seizure), two colonies were found outside the areas over which the blood had spread In the second case (taken twelve hours after a seizure), a similar colony was found on an agar-agar slant In the third (taken during a grand mal seizure), a scanty growth was found in bouillon All of these growths were found before the third day of incubation With methylene blue as a stain, the organism was found to be a very large oval-shaped bacillus, with deeply staining ectosarc and pale staining protoplasm It grew rapidly on agar-agar slants, and was distinctly fungoid in appearance Injections of pure cultures, both intravenously and intraperitoneally, into a rabbit failed to produce any systemic disturbance, and ten days after the last injection the animal was returned to its mates Feeling that this was a contamination, Petri plates were placed about the laboratory, and a similar organism was isolated Fortunately, at about this time, Dr Reed sent us a subculture of *Bacillus epilepticus* Examination of specimens from it showed an entirely different organism from the contamination described above All three of these cases were repeated either during or within fifteen minutes after the cessation of a grand mal seizure, and the cultures were found to be sterile

In addition to the foregoing group of cases, two patients with hemiplegia were examined, one the day following the seizure and the other at the cessation of a convulsion These cultures were sterile Similar results were found in two cases with myoclonus Both specimens were taken within a half hour after a grand mal seizure

In a personal communication, Dr M M Canavan,[4] assistant pathologist to the Massachusetts State Board of Insanity, has given us the results of postmortem cultures from seventeen epileptics on whom necropsies were held during the past year In every instance, from two to seven loci were studied for bacteriologic infection, and these have included always the heart's blood In three of these cases, all cultures were found to be sterile, a total of thirteen loci being studied In the remaining fourteen necropsies, with a total of seventy loci investigated, Dr Canavan was unable to find any organism approaching the morphology of *Bacillus epilepticus* as described by Dr Reed

SUMMARY

1 In a series of seventy cases, with a total of 160 blood cultures, there were 156 sterile cultures The remaining four showed contaminations

2 Four cases with either myoclonus or hemiplegia also gave sterile blood cultures

3 In a series of seventeen necropsies on epileptics, Dr Canavan, in a bacteriologic study, was unable to find any organism resembling *Bacillus epilepticus*

4 In conclusion, it would seem evident that, in the seventy epileptic patients studied, the epileptic syndrome was not due to the *Bacillus epilepticus* of Reed

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New Method of Antral Cleaning with Trochar—For some time it has been my practice after insertion of a trochar through the wall of the inferior meatus into the antrum of Highmore to proceed as follows The point of the trochar is turned downward so that it comes as near the floor of the antrum as possible Both nostrils are then closed around the trochar tube with the finger, and the patient blows forcibly This puts air pressure via the ostium maxillaris into the antrum and forcibly blows out the pus through the cannula It is much better to use a cannula of good size, and one has to manipulate it a few times to be sure the inner end is free I believe that this method practically empties the antrum of fluid, which the ordinary method with a trochar does not do—A C Heath, M D, St Paul

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[4] Personal communication from Dr Canavan to Dr Thom dated June 29 1916

Therapeutics

THE TREATMENT OF DIABETES

(Continued from page 1021)

THE DIET

Addition of Carbohydrates to the Diet—When, as a result of the fast, the urine has been free from sugar for twenty-four hours, feeding may be cautiously begun. All the food given must be weighed and its composition must be known approximately, at least. Unless this is done, no accurate idea of the food tolerance or of its caloric value can be obtained, and subsequent treatment becomes of necessity a "hit-or-miss" affair, with the probabilities all in favor of its being a "miss." Information as to the composition of the common foods may be obtained from various treatises on dietetics and food chemistry.[5]

The accompanying table, compiled by Joslin,[6] contains in a compact form all the essential information. The figures, although only approximate, are sufficiently accurate.

A convenient scale for weighing food is the movable dial spring balance, made by John Chatillon and Sons (85 Cliff Street, New York). With this balance it is a simple matter to allow for the weight of the receptacle.

Feeding is begun with food containing but small amounts of carbohydrate and lesser amounts of protein and fat. The most satisfactory diet to begin with is one composed exclusively of green vegetables of the "5 per cent group" (see table). These vegetables, although they contain but little available nutriment, have a large bulk and serve to fill the stomach, thus allaying in some measure the pangs of hunger. The indigestible residue is valuable in preventing constipation. From 150 to 200 gm.[7] of the vegetables of this group are given the first day. Approximately 5 gm. of *available* carbohydrates are contained in this amount. If no glycosuria occurs, the diet on the second day may contain vegetables equivalent to five more grams of carbohydrate, and this increase is made daily until 20 gm. of carbohydrate are given. Following this 5 gm. are added every other day until glycosuria occurs or the patient is receiving as much as 3 gm. of carbohydrate per kilogram of body weight in twenty-four hours (Joslin). After the first day or two carbohydrate may be given in the form of vegetables of the 10 per cent group, followed subsequently by those of the 15 and 20 per cent groups. Fruits are then added, and ultimately, if glycosuria has not supervened, bread and oatmeal.

Ordinary bread is but seldom included in the dietary of the diabetic. There are on the market a large number of brands of "gluten" and "diabetic" flour which contain relatively little carbohydrate and much protein. Bread made from such flour, provided the composition is accurately known, may be eaten. These special brands of flour, however, are expensive and many are fraudulent.[8]

JOSLIN'S DIET TABLE

Strict Diet—Meats Fish Broths Gelatin Eggs Butter Olive Oil, Coffee Tea and Cracked Cocoa

FOODS ARRANGED APPROXIMATELY ACCORDING TO PERCENTAGE OF CARBOHYDRATES

Vegetables

5 Per Cent	10 Per Cent	15 Per Cent	20 Per Cent
Lettuce	Onions	Green peas	Potatoes
Spinach	Mushrooms	Artichokes	Shell beans
Cauliflower	Squash	Parsnips	Baked beans
Sauerkraut	Turnip	Canned lima beans	Green corn
String beans	Carrots		Boiled rice
Celery	Okra		Boiled macaroni
Asparagus	Beets		
Cucumbers			
Brussels sprouts			
Sorrel			
Endive			
Dandelion			
Swiss chard			
Sea kale			
Tomatoes			
Rhubarb			
Egg plant			
Leeks			
Beet green			
Watercress			
Cabbage			
Radishes			
Pumpkin			
Kohlrabi			
Broccoli			
Vegetable marrow			

Fruits

Ripe olives (20 per cent fat)	Lemons	Apples	Plums
Grapefruit	Oranges	Pears	Bananas
	Cranberries	Apricots	
	Strawberries	Blueberries	
	Blackberries	Cherries	
	Gooseberries	Currants	
	Peaches	Raspberries	
	Pineapple	Huckleberries	
	Watermelon		

Nuts

Butternuts	Brazil nuts	Almonds	Peanuts
Pignolias	Black walnuts	Walnuts (Eng)	40 Per Cent
	Hickory	Beechnuts	Chestnuts
	Pecans	Pistachio	
	Filberts	Pinenuts	

5 Per Cent Miscellaneous — Unsweetened and unspiced pickles clams oysters scallops liver fish roe	Reckon *actually available* carbohydrates in vegetables of 5 per cent group as 3 per cent of 10 per cent group as 6 per cent

Thirty gm or 1 ounce of each of the following contain approximately

	Protein Gm	Fat Gm	Carbohydrates Gm	Calories
Oatmeal dry weight	5	2	20	110
Meat (uncooked)	6	2	0	40
Meat (cooked)	8	3	0	60
Broth	0.7	0	0	3
Potato	1	0	6	30
Bacon (cooked)	5	15	0	155
Cream 40 per cent	1	12	1	120
Cream 20 per cent	1	6	1	60
Milk	1	1	2	20
Bread	3	0	18	90
Butter	0	25	0	220
Egg (one)	6	5	0	75
Brazil nuts	5	20	2	210
Orange (one)	0	0	10	40
Grapefruit (one)	0	0	10	40
Vegetable 5 and 10 % groups	0.5	0	1	6

1 gm protein 4 calories
1 gm fat 9 calories
6.25 gm protein contain 1 gm nitrogen
30 grams (gm) or cubic centimeters (c c) 1 ounce
A patient at rest requires from 25 to 30 calories per kilogram body weight
1 gm carbohydrate 4 calories
1 gm alcohol 7 calories
1 kilogram 2.2 pounds

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[5] Useful books are Locke Food Values New York D Appleton & Co Atwater and Bryant The Chemical Composition of American Food Material Bull 28 Office Experiment Station U S Dept Agric

[6] Joslin Am Jour Med Sc 1915 cl 485

[7] Vegetables are best cooked by steaming in a double boiler as in this way nothing is lost

[8] Street J P Diabetic Foods Offered for Sale in the United States THE JOURNAL A M A June 28 1913 p 2037 Street and Mendel Diabetic Foods Rep Connecticut Agric Expt Station 1913 Pt. 1, Sec 1

The patient's longing for bread may, in a measure, be satisfied by bran biscuits These contain no carbohydrate and serve as a convenient vehicle for the administration of butter or other fats The bulky residue fills the stomach and relieves constipation [9]

The appearance of glucose in the urine means that the patient's assimilative limits have been exceeded and a fast must be instituted until the glycosuria ceases [10] Following the fast the carbohydrate ration should be diminished by one half and not increased beyond this amount for some days and then very cautiously The amount should be kept well within the limit of tolerance previously determined for a considerable period of time Subsequently, if there is reason to suppose the patient can assimilate more carbohydrate, the limit of tolerance may again be determined by gradual addition of carbohydrate, even to a point in excess of the former tolerance

In severe cases some patients cannot assimilate even the small amount of carbohydrate contained in green vegetables, although they may still be able to assimilate minimal amounts of protein and fat Such patients may be given at first green vegetables that have been cooked in three changes of water and the water discarded Vegetables so prepared contain practically no carbohydrate

Addition of Protein to the Diet — In severe cases of diabetes, it is advisable to determine the protein tolerance in essentially the same way that carbohydrate tolerance is determined, eggs and meat alone being fed in increasing amounts until glycosuria occurs In most cases of diabetes, however, protein may, to advantage, gradually be added to the diet during the period of testing the carbohydrate tolerance During the first week of green vegetable feeding, provided no glycosuria occurs, two or three eggs may be given during the day Lean meat is then added from day to day in amounts corresponding to 10 or 15 gm of protein (see table) until the patient is receiving daily about 1 gm of protein per kilogram of body weight, or if the carbohydrate tolerance is zero, only 0 75 gm Later, if desired, protein may be raised to 1 5 grams per kilogram of body weight (Joslin), provided, of course, this can be done without the development of glycosuria Children may to advantage be given as much as 2 gm of protein per kilogram

Addition of Fats to the Diet —When the amount of protein fed has reached 1 gm per kilogram of body weight, fats may be added to the diet in gradually increasing amounts (25 gm a day) until the caloric requirement of from 25 to 40 calories per kilogram of body weight is covered by the total food intake Patients who are exercising require a higher caloric intake than when resting, and growing children up to as much as 50 or 60 calories per kilogram, depending on the age The caloric intake should eventually be such that a progressive loss of weight does not occur On the other hand, the patient must not gain in weight, or, more correctly, he must not gain in adipose tissue, though muscular development is allowable

Fat, besides that obtained in the eggs and meat fed, may be supplied in the form of bacon, cream, olive oil or butter If marked acetonuria appears, it is advisable to substitute olive oil for butter and cream

Weekly Fast Days — For a long time it has been recognized that days of partial or complete fasting are of benefit to the diabetic Allen has incorporated this idea into his system of treatment, and advises frequent fast days Joslin's rule is to fast all patients once a week whose tolerance for carbohydrates is less than 20 gm When the tolerance is between 20 and 50 gm, 5 per cent green vegetables and one-half the usual quantity of protein and fat are allowed on the fast days, when the tolerance is between 50 and 100 gm of carbohydrates, the 10 and 15 per cent vegetables are allowed as well If the tolerance is more than 100 gm of carbohydrate, the carbohydrate intake is halved on the weekly fast days

(To be continued)

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[9] The recipe used at the Rockefeller Institute Hospital is

Bran	60 gm
Salt	¼ teaspoonful
Agar agar powdered	6 gm
Cold water	100 c c (½ glass)

The bran in cheese cloth and wash under cold water tap until water is clear Mix agar agar in the water (cold) (100 c.c) and bring to the point of boiling Add to washed bran the salt and agar agar solution (hot) Mold into three cakes Place in pan and when firm and cold bake in moderate oven from forty five to fifty minutes

Powdered agar agar is to be had at Munsch Protzmann 410 Madison Avenue New York

[10] Frequently a slight glycosuria may disappear in twenty four hours without any dietary change

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New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLE HAS BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION W A PUCKNER, SECRETARY

BARIUM SULPHATE FOR ROENTGEN-RAY WORK

—Barium sulphate freed from soluble barium salts

Action, Uses and Dosage —Barium sulphate for Roentgen-ray work, being freed from soluble barium and other salts, passes through the system unchanged and because of this is used in taking Roentgen-ray pictures of the stomach and of the intestines

For the Roentgen-Ray Examination of the Stomach —The evening before the examination the patient receives 1 fluidounce of castor oil In the morning an ordinary portion of wheat-meal porridge with which 2 ounces of barium sulphate have been well mixed, together with a little sugar and cream, is administered by mouth The patient is then directed to abstain from further food The examination is made six hours later

For the Roentgen-Ray Examination of the Colon —An enema consisting of 16 ounces of mucilage of acacia 3 pounds of condensed milk and 8 ounces of barium sulphate is warmed to body temperature and injected into the rectum from a height of from *3 to 6* feet The examination is made with a fluoroscope while the injection is passing into the rectum

Barium sulphate for Roentgen ray work is a fine white odorless tasteless and relatively light powder which is insoluble in water and organic solvents as well as in acids and in dilute alkalies

Boil 10 Gm of barium sulphate for Roentgen ray work with a mixture of 10 Cc of acetic acid (Sp Gr 1 064) and 90 Cc of water and filter Evaporate 25 Cc of the filtrate to dryness dissolve the residue in 20 Cc of water and filter (return the filtrate to the filter until quite clear) and to the filtrate add a few drops of dilute sulphuric acid no separation of barium sulphate should occur within one half hour (soluble barium salts) Saturate another 25 Cc portion of the acetic acid extract with hydrogen sulphide it should not become colored or turbid (heavy metals)

Boil 2 Gm of barium sulphate for Roentgen ray work for a few minutes with 10 Cc of nitric acid (Sp Gr 1 149 to 1 152) and filter the filtrate does not give a yellow precipitate with ammonium molybdate solution within half an hour (barium phosphate)

Triturate 2 Gm of barium sulphate for Roentgen ray work with 10 Cc of stannous chloride solution no dark coloration occurs within one half hour

Boil 10 Gm of barium sulphate for Roentgen ray work with 50 Cc of water containing 1 Cc of hydrochloric acid U S P, and filter the clear filtrate shows no spectral line for barium

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SATURDAY, OCTOBER 7, 1916

THE EFFICIENCY OF THE DIAPHRAGM

Considered as a muscle, the diaphragm performs a unique service to the body exceeded or equaled only by the musculature of the heart From birth to death it continues to carry out a series of orderly contractions at fairly regular intervals with a degree of regularity and rhythm that challenges our interest in much the same way as do the cardiac contractions, when attention is once directed to the unremitting muscular performances in respiration The position, the structure and the normal behavior of the diaphragm are unique, and it is strange, indeed, as a recent writer reminds us, that more physiologic facts have not been available regarding the functional properties of a tissue which, from the standpoint of importance to the individual, ranks highest of all skeletal muscles Accordingly we welcome the publication of recent investigations, from the Department of Physiology at Columbia University, respecting the comparison of the diaphragm with a series of other muscles of unlike properties and physiologic make-up[1] The behavior of the diaphragm under various experimental conditions has been contrasted with that of certain muscles of the leg, such as the extensor longus digitorum, the sartorius and the soleus, and at times the muscular tissue of the heart The extensor and the sartorius were chosen as typical pale muscles, the soleus as the type of red muscles The diaphragm appears intermediate between these two in color In physiologic properties, however, color appears to be a feature of limited significance

According to Lee and his collaborators, the most common order in which the several muscles may be arranged as to the quantitative development of the various general physiologic properties is diaphragm, sartorius, extensor, soleus The properties appear least pronounced in the red soleus, and next in the two pale muscles, with the sartorius slightly in the lead As to most of the properties, the diaphragm stands by itself in the lead of all the others Its tissue possesses the greatest reducing power, in other words, the greatest power to remove oxygen from its environment, and this power is probably dependent on the existence of an enzyme, its content in peroxidase is greatest, the irritability of the excised diaphragm to single induction shocks, while surpassed in degree at first by both the extensor and the sartorius, survives long after all the other muscles have died, in the brevity of its latent period, the excised diaphragm is surpassed only by the extensor

As a working mechanism the diaphragm is now experimentally demonstrated to be vastly superior to all the other muscles studied It lifts a greater load, it is capable of lifting it to a greater height, it continues to work for a longer time, and it performs before it becomes exhausted a much greater amount of labor All of these powers are greatly to its advantage in the important rôle which it plays

Other features further testify to the superior efficiency of the diaphragm for the uses to which it is devoted Its greater resistance to fatigue is exhibited in its longer working period and its greater work accomplished before becoming exhausted, it, with possibly some other respiratory muscles, is the last skeletal muscle of the body to submit to the paralyzing action of curare, other investigators have pointed out its greater tendency than other parts of the body to harbor trichinae — a peculiarity that is not yet explained, but may possibly be associated with the greater power of the diaphragm to utilize oxygen, when the body is subjected to high heat and high humidity, all the muscles are affected deleteriously, which is manifested in a diminution of the working period and the total work which can be accomplished before exhaustion sets in, but the diaphragm is affected far less than the other muscles by extreme inanition the total working period of the excised diaphragm is shortened far less than that of the extensor, although the total work which can be performed by the former is diminished to a greater degree — a fact which may possibly be associated with the greater activity of the diaphragm Among the muscles examined the glycogen content — often taken as an index of reserve energy — is greatest in this organ[2]

Not only in its contractile capacity but also in its power of resistance to deleterious influences, the diaphragmatic muscle commands a superior position Most of these facts, Lee and his co-workers remark, indicate that the diaphragm possesses much more efficient muscular tissue than do the other muscles — in other words, it is a superior physiologic *mechanism* This is exactly what might be expected, when the unique and superior role of the diaphragm among skeletal muscles is considered Here, they conclude, seems to be a striking instance of physiologic adaptation to physiologic requirements

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[1] Lee F S Guenther A E, and Meleney H E Some of the General Physiological Properties of Diaphragm Muscle as Compared with Certain Other Mammalian Muscles Am Jour Physiol 1916 xl 446 Lee F S Scott E L and Colvin W P Some of the Chemical Properties of Certain Mammalian Muscles ibid p 474

[2] Lee F S Scott E L and Colvin W P Some of the Chemical Properties of Certain Mammalian Muscles, Am Jour *Physiol* 1916 xl 474

THE LOWER ANIMALS AND HUMAN DISEASE

Only a few years ago Lee[1] wrote

> From time immemorial human life has been cursed by the two great evils of war and pestilence Working at times together, at times apart, there is no portion of the earth and no race of men that they have not devastated The one has slain its thousands, the other its millions, and sorrow and misery have ever accompanied and followed them Ages have come and gone, while through them all the clash of arms has sounded and murderous plagues have silently spread unchecked Now in the morning of the twentieth century the moral nature of man has risen against the one of these evils, and all his science is invoked against the other, and there is ground for the great hope that when our century passes away, they also will pass, and man will be freed forever from two of his greatest burdens

Whether the conquest of war is in sight is a question that may be left for debate to those who are watching the struggles in the present European conflict The possibility of a human conquest of infectious diseases looms up with the prospect of some success when the experience of the past few decades forms the background Since Pasteur's day that remarkable group of primitive forms called bacteria has been the center of attention Among the fifteen hundred species that have been described there are not a few enemies of mankind The earlier investigators in the new science of bacteriology directed their energies toward a study of the distribution of these micro-organisms, their modes of entrance and exit into the human body, the toxic products and dangerous lesions which they produced, and likewise to the ways in which the organism attempts to repel the attacks or prevent the ravages of unwelcome microbial invaders A science of immunology has been developed, protective or curative therapy has been devised, preventive measures have been successfully instituted The achievements have been notable, and there is still abundant opportunity for additional progress

In almost every field of science there comes a tendency at times to view the impending problems from somewhat similar angles and to apply the familiar tested methods of procedure to their solution Advancement becomes progressively slower and more difficult until some pioneer breaks through the confines of the conventional and enters new paths of progress New methods, new observations — the creation of a new avenue of approach illuminated by an unbiased attitude in place of the traditional or the customary — these are the antecedents of novel discoveries These thoughts of the frequent necessity for travel along unbeaten paths in scientific medicine are prompted by the recognition of the important part played by the lower animals in relation to human disease and an increasing appreciation of how manifold the interrelations are No single rule can be applied to recognize or control or prevent the numerous forms f disease dependent in some way or other on man's ation to animals

Some impression of the importance and of the large number of diseases of man carried by the lower animals is afforded by a partial resume recently prepared by Davis[2] of the University of Illinois College of Medicine in Chicago He has enumerated more than sixty known illustrations of human diseases transmitted by over twenty animal species This exemplifies how man's relations and points of contact with a large variety of the lower animals are more intimate and complex than those of any of the other animals to other species, and as a result of such relations, on the whole, the disease transmission from animals to man is naturally increased in number and variety This is *one of the penalties that man pays for being nurse, doctor and master of the brute creation*

The modes of transmission of disease from animals to man are varied, and some of them are well recognized Davis recalls that infection in man may occur through simple contact with diseased animals The infectious agent may be carried mechanically from person to person or from animal to person through food or otherwise by a second animal The animal may through a bite produce a lesion into which the infectious agent is transferred The parasite may be transmitted to man through the meat of lower animals used as food The infectious agent may be transmitted to man through the secretions of the lower animals The infectious agent may enter one of the lower animals, in which it passes through a regular phase or completes a cycle and then, usually through a bite of the animal, is transmitted to man

A few somewhat extraordinary instances deserve to be repeated in illustration of the unexpected diversity of the relationships of animals to man in respect to disease Recently an outbreak of several cases of anthrax occurred in England which after considerable difficulty was traced to the use of infected shaving brushes The anthrax bacilli were recovered from the used brushes as well as from new brushes from the same stock obtained in a store They were made with hair from a diseased animal Malta fever is transmitted largely through the milk and urine of goats infected with *Micrococcus melitensis* The difficulty of recognition of the source of the infection lies in the fact that in most of these animals there are no symptoms whatever, the micrococcus being found in the secretions of animals perfectly healthy and which remain so The problem of the healthy carrier thus applies to the lower animals in this new relation Again, over thirty milk-borne epidemics of streptococcus sore throat are already on record It would now seem that in some instances virulent streptococci of the human type may find their way into the udder of the cow through the contaminated hands of the milker and there multiply and return subsequently in large numbers in the milk and infect the consumer Some of these epidemics and perhaps many of them have originated thus Still different is the acquirement of disease where more than one species of transmitting agent is concerned For example, Davis reviews how most interesting relationships exist in this connection between some of the nematoda and the trematoda or fluke infections in man and certain small water animals, including crabs, snails and other arthropods For example, the guinea-worm, a filarial parasite in man, lives in the tissues, and at times the female bores outward through the epidermis, discharging the embryos which, if they find water, swim about and enter a small crustacean, the waterflea or cyclops, in which they remain for several weeks undergoing certain transformations Finally they may enter the stomach of man through drinking water and then bore through the stomach wall into the tissues again

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[1] Lee F S *Scientific Features of Modern Medicine* New York 1911 p 64

[2] Davis D J On Certain Relations of the Lower Animals to Human Disease Science 1916 xli

We must be prepared to appreciate and particularly also to educate the public to an understanding that though the most universal mode of transmission of the more widely distributed infectious diseases is through contact with an infected person and infected personal articles, this is by no means the sole mode of dissemination Our study of disease in medical and veterinary institutions, says Davis, should be at least as broad and as comparative as is the study of zoology or botany In order to understand the natural history of many diseases, comparative studies are absolutely necessary It would undoubtedly be advantageous both from a humane as well as from a scientific standpoint, he adds, if our medical schools and hospitals, our veterinary hospitals and even our cat and dog hospitals and other places for the care of sick animals could all be concentrated in one institution for the broad study of disease

DIETARY TOXICITY VERSUS DEFICIENCY

The prominence given to the question of dietary deficiencies in the more recent investigations and discussions of the pathology of metabolism has, very properly, directed consideration to factors of nutrition and disease not until now adequately appreciated Enthusiasm for new discoveries or promising ideas proverbially tends to concentrate attention on that which is presumably novel, and incidentally there is a liability to overlook other highly important factors which are not, for the moment, in the center of interest Thus, when unusual interest in the toxic performances of some variety of micro-organism is dominant, there is liable to be a tendency to overlook the equally significant powers of defense of the host, or, again, when some unexpected portal of entry for noxious germs into the body is brought into prominence by a new observation, the other possibilities of bacterial invasion are liable to be temporarily overlooked or minimized, if not entirely forgotten

An illustration of what has just been indicated is suggested by recent researches from the Departments of Agricultural Chemistry and Anatomy at the University of Wisconsin[1] In a noteworthy investigation[2] reported in 1911, it was pointed out that a ration from the wheat plant — wheat grain plus wheat straw — was wholly inadequate with heifers for reproduction and in some instances for continued growth With swine, confined to the wheat grain and a suitable salt mixture, growth soon ceased and the animals passed into a poor condition, while a corn and salt mixture ration was at least sufficient for slow growth and continued well-being[3] Since then our ideas of what constitutes an adequate ration have been considerably expanded[4] The nature of the so-called deficiency diseases or avitaminoses has been widely discussed in relation, among others, to beriberi, scurvy, rickets and pellagra It may be stated, in a general way, "from the extensive data now available, that certain at present unidentified substances aside from protein, carbohydrates, fats and salts are indispensable for growth or prolonged maintenance, and furthermore that there is a class of such accessories soluble in fats and another soluble in water and alcohol" Furthermore, "it seems highly probable that, while the amount of accessory substances of either of these classes which is required to induce growth is small, the evidence points to the belief that a certain quantity must be present before any growth can take place, and that above this amount, growth seems to be in some measure proportional to the amount of accessories present"[5]

Evidence seems to be at hand that in certain defects of nutrition, presumably of dietary origin because they can be corrected by alterations in the food, we have to deal, not with a true deficiency in the diet, but with some inherent substance in the ration that is either interfering with the use of certain constituents necessary for perfect nutrition, or is directly causing nutritional disturbances Hart, Miller and McCollum[1] have now found apparently that certain wheat rations produce pathologic conditions, with histologic pictures analogous to those seen in the polyneuritis of fowls, as the result of an inherent toxicity, as well as by a deficiency in the food supplied Malnutrition, histologically characterized by nerve degeneration, may result from the absence of certain factors in the diet, as in the case of beriberi A similar condition may likewise arise from the presence of toxic materials in apparently normal food products, and in the presence of all known factors essential for continued growth and well-being. The newer investigations of the Wisconsin workers indicate that with a large mass of wheat in the ration of swine, toxicity will follow even in the presence of all the recognized factors for growth. Only in the presence of very liberal quantities of all these factors can the effect of the toxicity be overcome. One almost inevitably thinks of the cottonseed feeding problem in this connection. The lesson of these significant observations may be summarized in the words of the investigators: For normal nutrition with natural foodstuffs not only must there be a plentiful supply and proper constitution of the foregoing essential factors, but also a supply sufficient to overcome any inherent toxicty or else an absence of the toxicity itself. Of course it is assumed that some kinds of toxicity of natural foodstuffs can be overcome by a plentiful supply of the normal factors of nutrition. They may not always be possible.

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[1] Hart, E B Miller, W S and McCollum, E V Further Studies on the Nutritive Deficiencies of Wheat and Grain Mixtures and the Pathological Condition Produced in Swine by Their Use, Jour Biol Chem 1916, xxv 239

[2] Hart E B McCollum E V Steenbock, H, and Humphrey, G C Research Bull 17, Wisconsin Experiment Station 1911

[3] Hart, E B, and McCollum E V Jour Biol Chem 1914 xix 373

[4] Compare, for example Mendel, L B Nutrition and Growth The Journal A M A May 8 1915, p 1539 McCollum E V and Davis, M Jour Biol Chem, 1915 xxiii, 181 A Report on Nutrition in a German Internment Camp editorial, The Journal A M A July 8 1916 p 125

[5] McCollum, E V, and Davis M The Essential Factors in the Diet During Growth Jour Biol Chem 1915 xxiii 231

OFFICE HYGIENE

One of the most important business centers of the world, the City of London, was credited in the census with a night population of about 26,000. During the day, this district contains from 1,000,000 to 1,500 000 persons, a great number, perhaps a majority, of whom are employed in office buildings. In most great cities a similar state of affairs exists. The conditions under which these diurnal inhabitants work have received little attention from sanitarians, who have devoted themselves chiefly to the investigation and amelioration of the working environment of industrial employees and schoolchildren.

Recently, under the auspices of the Department of Health of New York City, a sanitary survey was made of a typical city block containing buildings of different types from the oldest to the most modern. The results as regards lighting and ventilation were published in the monthly bulletin of the department.[1]

It is natural that architects and others responsible for the construction of office buildings should attempt to produce a favorable impression on the prospective tenant. The majority of tenants are, from past experience, capable of forming a fairly sound judgment on the heating arrangements of a building, they are also easily satisfied with the illuminating devices, provided the esthetic effect is good and there is enough light. It follows that insufficient attention is likely to be paid to the amount and distribution of the light on the working surfaces of the employees' desks. In respect to lighting, the most important defects are the two extremes of insufficient light of any kind and an excess of artificial light. In the New York survey it was found that less than 15 per cent of the employees had access to natural light, and even of these many were obliged to supplement it with artificial light. Under such circumstances, the importance of ascertaining what are the best means and quantity of illumination is evident. The most satisfactory working conditions, from the physiologic point of view, for typists and bookkeepers are found to be the use of duly shaded sources of light, about 19 inches above the working surface and of such intensity that one square foot of white surface reflects light equivalent to eight or nine standard candles (eight or nine "foot candles"), the general illumination of the office being secured by ceiling lights. Health is ameliorated, comfort and efficiency increased by improved lighting, which generally means, in this case, a proper shading of the eyes from direct rays and a greater diffusion of the light with, as often as not, a considerable reduction in its intensity. In the most expensive installations, high power modern lamps are frequently combined with metallic reflectors, concentrating a brilliant disk of light on a small portion of the working surface and leaving the surroundings comparatively dark. This produces a contrast which experience has shown is fatiguing to every retina and even seriously harmful to some.

With regard to the problems of atmospheric conditions such as the purity, the movement and the humidity of the air, the prospective tenant is generally wofully ignorant. Moreover, it would be difficult for any one but an expert ventilation engineer to pass judgment on the efficiency in winter of what is known as "air conditioning" apparatus from the results of an examination made of an empty building in summer.

Under this head, the findings of the New York report are what would be expected in view of the considerable experience accumulated during the last few years. The actual amount of space available for each person was generally sufficient, but ventilation was unsatisfactory because, the nature of the building and its surroundings tending to cause drafts, the windows were not kept open during cold weather and the few inside openings such as transoms, when existing, were not in use.

In respect to the three atmospheric elements of working conditions, ventilation, temperature and humidity, this report is not so extensive as that issued after a similar survey by the Chicago Commission on Ventilation.[2]

The findings, the methods and the recommendations of the latter commission will repay study by all who are interested in this subject. Briefly stated, the principal recommendations were that the air should be washed and filtered, that, whenever possible, upward ventilation should be used, that air currents impinging directly on persons should have a temperature not below 60 F , that the humidity of the air should not be allowed to fall below 40 per cent of saturation, and that the temperature should be maintained at about 68 F This is ideal, of course, but it would be both difficult and prohibitively expensive to adapt existing buildings to meet all exigencies of such a system This, however, is less true of the lighting arrangements and the control of humidity, and it would be found true economy in the construction of new buildings to design the heating, ventilating and lighting plant in accordance with the indications of sanitary science

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[1] Monthly Bulletin of the Department of Health of the City of New York, August, 1916, vi, No. 8.

[2] Chicago Commission on Ventilation Report, 1914.

It is now well established that the principal defect of air conditions in centrally heated buildings is the fact that in raising the temperature of the air, steps are not taken to insure a due degree of humidity Warm air holding less than 40 per cent of its potential humidity is irritating to the respiratory passages and is far more easily contaminated by dust, dried sputum and other objectionable particles A number of satisfactory automatic and semiautomatic devices for regulating the humidity of the atmosphere are in use[3] Some of these can be adapted to existing buildings and others cannot For the greater part of the United States, there is little fear of overcharging the atmosphere with moisture during the winter Simple evaporating devices adapted to existing radiators will therefore be found satisfactory in relatively small rooms In larger rooms the same method may be employed, *if the humidity is uniformly distributed by* appropriately placed fans It should be unnecessary to say that the best way of purifying the atmosphere is not by adding foreign materials to it but by introducing fresh air All of the much advertised products recommended to be added to the water evaporating on radiators are worthless and serve only to transfer money from the pockets of the credulous to those of the exploiting class

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A NEWLY DISCOVERED FUNCTION OF THE BONE MARROW

The clotting of blood is a complicated process from the standpoint of the chemical changes concerned in it *Most of the essential facts of the phenomenon are now* clearly recognized, but the theory of coagulation still remains shrouded in considerable mystery The literature of the subject, which has received voluminous additions for more than half a century, is so largely confused by the variable nomenclature and unlike designations for the same features, that the untrained person will find it difficult to unravel the strands of the intricate meshwork of description and speculation The fundamental role of the soluble blood protein fibrinogen, which is converted into fibrin when the blood clots, and the failure of the clotting process to be accomplished in the absence of soluble salts of calcium, are quite generally recognized A further factor is found in what was formerly designated as fibrin ferment, but more recently thrombogen or prothrombin, to indicate the antecedent of a substance that plays a significant part in the formation of fibrin

As delayed or inadequate clotting of the blood is of no little moment to the welfare of the individual, and is a symptom of various pathologic conditions, precise information respecting all of the factors indispensable for coagulation is imperative for any rational therapeutic procedure in certain diseases If fibrinogen is lacking, the organs that normally supply it must be stimulated to their usual normal performance Similar reasoning is applicable to the other essential contributors to the clotting of the blood In recent years a more accurate determination of the nature of the deficiency in cases of unsatisfactory coagulation has become possible Methods for remedying the discovered defects are not yet thoroughly satisfactory.

Prothrombin has been believed by different investigators to rise from one or more of all the familiar formed elements of the blood At present there seems to be no doubt, however, that thoroughly washed mammalian erythrocytes do not yield prothrombin Its possible origin from leukocytes disintegrating in the blood has become doubtful, to say the least There is no question, however, that prothrombin arises from blood platelets, indeed, the disintegration of the latter elements accompanies the act of coagulation and seems to be one of the first features in it Low platelet counts are known, furthermore, to be associated with certain tendencies to bleeding, and the lack of platelets has been held responsible for the deficient coagulation

In the course of experiments conducted in the physiologic laboratory of the Johns Hopkins University on the perfusion of bone marrow, Drinker[1] has observed an unexpectedly large amount of prothrombin in the perfusing fluid after it has passed through the marrow In regard to the cells of origin of this prothrombin, there is no tenable evidence that it comes either from leukocytes, lymphocytes, myelocytes, nucleated red cells, or wandering epithelial cells, *all of which may be found in the marrow* On the other hand, the blood platelets are known to contain prothrombin, and the origin of the plates from the megacaryocytes of the marrow is said to be well established The latter structures are, accordingly, the probable source of the marrow prothrombin The discovery that bone marrow is an important and specialized source of prothrombin is significant

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[3] Carpenter R C Heating and Ventilating of Buildings, New York John Wiley & Sons 1915

[1] Drinker, C K and Drinker Katherine B The Bone Marrow as a Source of Prothrombin, Am Jour Physiol 1916, xli 5

The Appeal of the Mysterious—Ignorance is guided by terror, rather than by love To the undisciplined mind, whatever *is supernatural or unexpected makes a stronger appeal* than the familiar phenomena of daily life—R M Lawrence, Primitive Psychotherapy and Quackery

Current Comment

GOITER AMONG THE UNITED STATES INDIANS

Simple goiter occurs not only as a sporadic disease in all parts of the world, but also as an endemic manifestation in certain regions For Europe these goiter districts have long been recognized They are clearly localized in parts of the Swiss and Italian Alps Silesia and the Black Forest have circumscribed goiter areas The disease is also endemic in definite regions of France, Spain, England and Asia In our own country the existence of goiter in comparable endemic form has not been so well established, or at any rate recognized It has long been known, however, that goiter is unduly prevalent in the region of the Great Lakes Sometimes the existence of goiter among domestic animals calls attention first to the similar tendency in man in the same region This has lately been the case in some of the valleys of northern Montana The intensive investigation of the problems connected with the etiology of endemic goiter[1] might advantageously be prosecuted in this country more vigorously than it has been in the past America has its own goiter regions Dr Hrdlicka[2] of the U S National Museum has directed attention to an immediate opportunity for a thorough investigation, by modern means, of the conditions leading to thyroid enlargement He reports the excessive prevalence of goiter and symptoms of thyroid derangement among the American Indians along that part of the Missouri Valley comprised between the Cannon Ball Creek and Cheyenne River in North and South Dakota The situation is said to be sufficiently serious to demand speedy steps for relief, and its localization is attested by the fact that in his visits to upward of fifty tribes, Hrdlicka has never found a locality in which the thyroid disease was as prevalent and active, and where conditions for research into its causes were more promising The incidence of goiter among the United States Indians has been estimated at 3 per thousand population A report of 61 cases per thousand among the Blackfeet and Two-Kettle bands of the Cheyenne River group was made some years ago The present equally great or greater prevalence of the disease in certain parts of the Fort Yates territory had not been suspected Hrdlicka maintains that goiter among Indians is not connected with cretinism, which seems not to occur at all in that race, or with myxedema, and only rarely and moderately with exophthalmos The clues to its origin seem to be quite as baffling in the Missouri Valley as in Switzerland Hrdlicka relates certain facts which help to negate some of the older theories of race and region so long held Disturbance of the thyroid gland among the Indians, he tells us, is not a tribal peculiarity, for other branches of the Sioux away from the river are less affected There is no evidence that the disease extends for any great distance along the Missouri, or is common among the white persons of the same localities The water used by the natives is mostly that of the Missouri and its small affluents The present habits of these Indians are those of fairly civilized Indians in general They were always hunters and great meat eaters, and are doubtless still more so than agricultural tribes, but this is true of all the Sioux The country is of the rolling prairie type, the climate rigorous but not oversevere Malarial infections are infrequent, but tuberculosis and venereal diseases prevail If these facts afford no clue to the cause of goiter, they may nevertheless promote inquiry

AN INSURANCE MAN ON SOCIAL INSURANCE

At the National Convention of Insurance Commissioners held last week in Richmond, Va , Hon Rufus M Potts, superintendent of the Illinois State Insurance Department, and chairman of the Committee on Social Insurance appointed by the convention, discussed social insurance from the standpoint of the insurance expert Fearing that the designation "social insurance" might produce a hostile attitude on the part of the general public on account of an erroneous association with the Socialist party, Mr Potts proposes to designate all such plans as "welfare insurance," which he defines as "the use of insurance principles and methods for the purpose of maintaining every citizen of the United States in a state of wellbeing throughout the various misfortunes and emergencies of life that would otherwise destroy his wellbeing and cause destitution and suffering " He called attention to the fact that there is in every country an unnecessary amount of poverty or suffering which is not due to the improvidence or even misconduct of the individual himself, but which is brought about by accident, sickness, premature death of the bread winner, involuntary unemployment, old age or other causes beyond the control of the individual He estimates that there are annually in the United States about 82,520 deaths from industrial accidents and 208,000 nonfatal industrial accidents, each sufficiently severe to cause more than seven days' loss of time, and that the total number of nonfatal accidents, industrial and nonindustrial, is about 697,000 The number of cases of sickness among working people he estimates at 13,400,000, entailing a total loss of time of 284,750,000 days, or a wage loss of $488,142,852 The number of deaths each year among wage earners between the ages of 15 and 65 he estimates at 608,239, causing approximately 200,000 dependent families left unprovided for annually Regarding unemployment, there are practically no reliable statistics Existing society, accident, sickness and life insurance are wholly inadequate, and reach only a small portion of the total population Universal welfare insurance under the control of the federal government would, in Mr Potts' opinion, reduce the expense of operation to a negligible minimum, render it feasible for the nation to contribute to welfare insurance, and compel the improvident to make provision for their families and themselves when overtaken by misfortune The insurance of all the workers would include such enormous numbers that under the law of average the conduct of the plan would be stable and certain The increase of production through greater individual and industrial efficiency and the diminished necessity for charitable relief will more than justify the expense involved Mr Potts' discussion of the subject is of special interest as coming from an insurance official rather than from a physician, a public health official or a social worker It is another evidence of the growing interest in social insurance

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[1] Endemic Goiter editorial, The Journal A M A Aug 12 1916 p 514

[2] Hrdlicka A Goiter Among the Indians Along the Missouri Science Aug 11 1916 p 203 Physical and Medical Observations Among the Indians of Southwest United States and Northern Mexico p 201

FIRE AND ACCIDENT PREVENTION DAY

October 9 has been designated by the National Fire Prevention Association and the National Safety Council as a day on which to recall the need for the conservation of human life and property through prevention of the hazards with which these two associations are concerned Holocaust after holocaust and the tremendous loss of property through fire have served to focus the attention of specially trained experts on the fire problem underwriters' laboratories have been established to investigate the development of fire apparatus, engineers have devoted their attention to the elaboration of fireproof materials and sprinkling devices, furniture builders have designed steel and other noncombustible factory and office equipment But all this has been prompted, in part, at least, by financial interests The sacrifice of human lives has been a secondary consideration, it should be the first Loss through fire is not always chiefly a loss of property, as evidenced by the Slocum, Triangle Shirtwaist Company, and Iroquois fires For this reason the fire problem, especially as it affects public institutions, merits the attention of physicians Industrial diseases have recently received extended investigation New industries and new processes have brought with them a train of new diseases In these investigations, physicians have been the leaders Of great importance, also, is the prevention of industrial accidents The problems are not, of course, chiefly medical, but rather problems to be considered by the safety engineer Physicians are not ordinarily conversant with the construction of boilers, fly-wheels, transmission machinery, elevators or cranes There are, however, many phases of industrial accident prevention problems in which the physician can aid in securing adequate safeguards For example, records can be kept of the causes of all industrial accidents with which the physician is associated, and means can be sought to prevent similar occurrences in the future Physicians may recommend the provision of appropriate goggles for workers who are liable to injury of the eye from foreign bodies Many accidents are due to fatigue, but long hours are not the only cause, fatigue is as often due to speeding up or to monotony of muscular effort, as to long hours The physician here should determine what is reasonable human capacity, thus aiding in preventing accidents caused by overtaxing human effort By the position of influence which many medical men acquire in the community in which they dwell, they are among those citizens whose opinions carry the greatest weight in matters of public policy As a citizen, therefore, the physician will often have opportunities of assisting in the application of measures for the reduction of accidents Practically all accidents are preventable An infinitesimal number — as that of the man, for example, who puts his finger in an electric fan — are of the variety dependent on human mental fallibility Movements such as those promulgated by the National Fire Prevention Association and the National Safety Council should receive the cooperation and encouragement of physicians, who have always been among the first in movements for the preservation of human life and health

CHANGES IN BUTTER DURING COLD STORAGE

The causes of rancidity in butter have frequently been investigated by chemists and bacteriologists Recently the causes for the undesirable flavors sometimes present in cold-storage butter have been sought by dairymen, storage-men and hygienists It has been generally supposed that rancidity is due to changes taking place in the fats of which butter is principally composed and that the "off-flavors" are merely mild forms of rancidity After a series of studies on butter which had been prepared under widely varying conditions and stored at 0 F for varying lengths of time, Dyer[1] concludes that (*a*) the development of undesirable flavors in storage butter is not dependent on an oxidation of the fat itself, but that (*b*) it is attributable to a slow process of oxidation progressing in the nonfatty constituents of the buttermilk, and that (*c*) the extent of this change is directly proportional to the amount of acid present in the cream from which the butter had been prepared In other words, the buttermilk supplied the substances which decompose during cold storage and this decomposition is proportional to the amount of acid present in the cream before churning The experiments showed that butter made from sweet cream had a very mild flavor and kept in good condition almost indefinitely in storage, while the butter from high acidity cream had a high flavor but would not keep well The remedy consists in preventing the cream from ripening too much, i e, producing too much acid before churning or, if that has occurred, in washing out the buttermilk from the freshly churned butter with fresh water

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[1] Dyer D C Progressive Oxidation of Cold Storage Butter Jour Agric Research 1916 vi 927

Psychology of Race —Much psychological attention has been devoted to the *primitive races,* and recent ethnological expeditions have not seldom been accompanied by psychologists who carried their various reaction time instruments and attention apparatus to the South Sea Islands Yet the results indicate a very thorough similarity of all human beings, as far as the most elementary functions are concerned The popular idea, for instance, that the senses of the savages are sharper than those of civilized men can be disproved by exact experiment If certain tribes are able to recognize objects at distances at which civilized men do not notice anything, it is essentially through training of the attention for the observation of small signs, a training which is forced on them by the conditions of their life The true mental differences between the primitive and the civilized peoples appear in the more complex functions —Munsterberg

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest such as relate to society activities new hospitals education public health etc)

ALABAMA

Typhoid Reduction in Birmingham—Dr Cecil D Gaston, health officer of Birmingham in his report for August shows that 51,122 persons had received inoculation against typhoid fever from the city of Birmingham, and the cases have reduced 411 per cent, as compared with July

Personal—W E Bingham, Tuscaloosa, has been reappointed a member of the State Pharmaceutical Board ——Dr Hathaway J Denman, Birmingham has been appointed intern at the Fresh Air Camp for Tuberculosis Montgomery —— Dr Marvin M Gould, Mobile, who has been appointed chief surgeon of the hospital at David, Chiriqui Province, Panama has sailed for Europe to pursue postgraduate studies and will return to his post in Panama in December ——Dr Isham Kimbell, Auburn has been commissioned captain in the Medical Corps of the Alabama National Guard

ILLINOIS

Conference of Charities and Correction—The Illinois State Conference of Charities and Correction will be held at Alton, October 20 to 22

Hospital Association to Meet—The Illinois State Hospitals Medical Association will hold its next meeting, October 26 and 27, at the Peoria State Hospital

Dispensary Established—A dispensary for Sangamon County was opened at St Johns Hospital, Springfield September 12, under the charge of Dr Jay T Wood

Hospital Opened—The new hospital located at Paris was formally opened, September 22, and the public inspection occurred on the next day The institution is under the charge of Dr Roland Hazen

Chicago

Additional Appropriation for Poliomyelitis Asked—The health commissioner has asked for an additional $6 000 to be used to combat infantile paralysis There had already been appropriated $8,000 for this purpose from the mayor's contingent fund

The Study of Typhoid Fever—Messrs Isham Randolph, Lyman E Cooley and Langon Pearse representing the sanitary district, Cicero D Hill, representing the board of local improvements, W A Nelson and W R Matthews of the bureau of sewers, and Chief Engineer Frank W Sadler of the Sixty-Eighth Street pumping station have been appointed, by the health committee of the city council, a commission to study sewer and water conditions in the district between Forty-Fifth and Eighty-Seventh Streets One of the duties of the commission will be to fix the responsibility for the conditions which caused the typhoid epidemic in this district last year

Personal—Prof A J Carlson of the University of Chicago lectured in Toronto before the Academy of Medicine October 3, on 'Some Recent Studies of the Physiology and Pathology of the Stomach' ——Dr John Clarence Webster who underwent an operation for gallstones in the Royal Victoria Hospital at Montreal September 27 is improving ——Drs Gilbert M Loewe and Harry Mortimer Richter who have been serving in a hospital at Naumberg-am-Salle arrived in New York from Germany, September 30 ——Drs Christian B Luginbuhl and Franz H Harms have been appointed by the state department to work under the direction of the American Ambassador at Berlin for the relief of British prisoners of war in Germany

INDIANA

Infantile Paralysis—Fifteen cases of infantile paralysis have been reported to the Indianapolis Board of Health during the year ——The two schools that had been closed on account of the disease will be reopened as it is believed that the situation is under control

Conference on Mental Defectives—The Indiana State Conference on Mental Defectives will be held at the Hotel Claypool, Indianapolis, October 16 and 17 The object of this conference is to discuss the methods of reducing if possible, the number of feebleminded insane and epileptic persons in the state

Personal—Dr Charles J Rothschild Fort Wayne, announces his candidacy for coroner on the Republican ticket ——Dr Halsted S Murat has resigned as chief physician at the Indiana Reformitory Jeffersonville and will move to Middletown, Ohio ——Dr Giles E Mowrer has been appointed physician to the Indiana Reformitory, Jeffersonville

Changes in Medical Corps—Capt Archibald G Chittick Frankfort commanding Ambulance Company No 1 Indiana N G has been promoted to major, M C ——Lieut Donald C McClelland Lafayette assigned to the Ambulance Corps, has been promoted to captain ——Maj Frank W Foxworthy, M C Indianapolis has resigned ——Drs Melville Ross Bloomington, and Claude D Greene, Spencer have been commissioned first lieutenants M C, and assigned to the Ambulance Company

The Typhoid Situation—The typhoid situation in Indianapolis is very much improved Only four or five cases are being reported each day at present Since August 1 611 cases have been reported with thirty-two deaths Practically all the schoolchildren of the city have been vaccinated, and the city board of health has arranged to inoculate free of charge those who are unable to pay Judge Ewbank of the circuit court refused to grant a temporary injunction against the board of school commissioners commanding the board to admit all the schoolchildren who had not been vaccinated In his decision he pointed out that the Supreme Court of Indiana has twice decided that orders of local boards of health requiring all children to be vaccinated in times of epidemics were not unconstitutional

State Association Meeting—At the annual meeting of the Indiana State Medical Association held in Fort Wayne September 27 to 29 the following officers were elected president Dr John H Oliver Indianapolis vice presidents Drs John W Phares Evansville Charles M Mix Muncie and George L Guthrie Indianapolis, secretary-treasurer Dr Charles N Combs, Terre Haute (reelected), delegates to the American Medical Association, Drs Charles H Good Huntington, and Miles F Porter Jr Fort Wayne (reelected) alternates Drs Charles A White Danville and Anexamander M Hyden Evansville and councilors for their respective districts Drs Joseph D Heitger Bedford Frederick A Tucker Noblesville and Oliver I Gronendyke Newcastle The report of the legislative committee recommending a full time health officer for each county in the state and the establishment of a department of child hygiene in connection with the state board of health was adopted Evansville was selected as the next place of meeting

KANSAS

Personal—Dr Oscar L Peak Springfield Mo, has assumed his new duties as national medical director of the Knights and Ladies of Security with headquarters at Topeka ——Dr Newton A Seehorn has been appointed physician of the State Reformitory Hutchinson succeeding Dr Fred A Forney resigned ——Dr William R Dillingham for four years on the staff of the Halstead Hospital has resigned and has been succeeded by Dr Victor E Chesky Nickerson —— Dr Eva Harding Topeka was nominated for Congress on the Democratic ticket at the recent primary election ——Dr Charles A Dudley has been appointed health officer of Pittsburg succeeding Dr Charles F Montee ——Dr Edward M Miers Salina has been appointed chief surgeon of the Salina-Northern Railway ——Dr Walter C Palmer Hiawatha has returned after three months in a field hospital on the western war front

MARYLAND

Census of Babies—Dr Frederic V Beitler, chief of the bureau of vital statistics of the state department of health has arranged with the police board for a census of all children born in the city since January 1 The census will be made in connection with the school census which will be started in November From the standpoint of the department the value of the census will be that it will provide a check against the regular reports of births which physicians and midwives are required by law to make to the health department

Personal—Dr William H Welch Baltimore professor of pathology at the Johns Hopkins Hospital University has returned from Europe, where he went early in the summer to make an inspection of some of the most noted European hospitals in order to secure data for the new school of hygiene and public health to be established at the Johns Hopkins University While in Europe he also secured a great deal of information which will be valuable in organizing and mobilizing the scientific resources of this country He secured this information in his capacity as president of the National Academy of Sciences and at the request of the president While abroad, Dr Welch spent some time with Sir William Osler at Oxford and also visited Dr Joseph A Blake at his hospital at Risorangis and Dr Alexis Carrel, New York, at Compeigne

Plans for Children's Hospital School—Plans for the final complete development of the Children's Hospital School that will make it one of the finest institutions in the state have been decided on and are now being worked out by architects to be available when occasion offers in the future The school is now being used by the city for the treatment of infantile paralysis, and it will not be until after it has been turned back to its owners that the work of construction will begin Even then only one of the buildings designed will be erected, but the authorities of the institution have had a complete set of harmonious plans drawn, so that as the school grows, the best possible use can be made of any legacies or endowments that may fall to it The first building to be put up is to be the isolation observation ward Later as funds make the work possible, two private wards, a medical and a surgical building will be added in the order named The buildings, thirteen in all, will probably not be completed for some years, but if an opportunity should come, the institution will be in position to avail itself of it

Plague Renews Its Grip—During the past week, more infantile paralysis has been reported in the city and state than at any time since the plague made its appearance Sixty-nine positive cases of poliomyelitis have been reported in the city since September 1, and eighteen have proved fatal Physicians in the city health department are showing concern over the fifth case of the disease to develop among children at the Tudor Hall apartment house during the week All children in the apartment are quarantined and will be kept under surveillance for two weeks or more A child brought from Maine, and having a Maine State Board of Health certificate as well as a traveling certificate from the United States Public Health Service physicians in New York, developed the disease shortly after arriving at a hotel at Denmore Park and the health department has the hotel and family under strict quarantine Dr John D Blake, health commissioner, states the plague is not spreading, and the rule regulating gatherings of children in public places has kept the epidemic from assuming more alarming proportions However, his request to the board of estimates to retain the thirteen extra physicians and two detectives for at least two weeks longer has been granted

NEW YORK

Paratyphoid at Camp Whitman—There are a few cases of paratyphoid fever among the five organizations of state troops at Camp Whitman, Greenhaven These cases have been confined entirely to members of the Fourteenth Infantry

Special Study Course for Health Officers—About twenty-five health officers, chiefly from central New York, began a special course of study at Syracuse University September 10 The course was outlined by Dr Frederick W Sears, Syracuse, district sanitary supervisor, and approved by the state health council The course is designed better to prepare all student health officers for the performance of their duties in their respective communities

Personal.—Dr Amos O Squire has resigned as prison physician at the State Prison, Ossining——Dr Richard H Hutchings, medical superintendent of the St Lawrence State Hospital, Ogdensburg, has been given an indefinite leave of absence and will undertake a comprehensive study with reference to the conservation of mental health in his native state, Georgia——Dr Charles W Pilgrim, Poughkeepsie, superintendent of the Hudson River State Hospital, was appointed president of the State Lunacy Commission, September 13

Academy of Medicine for Long Island—Plans are being formed by Brooklyn physicians for a new organization to be called the Long Island Academy of Medicine, whose membership will include the profession of the entire island The project involves the establishment of a great medical library to be kept in a library building which will cost $250,000 At present the library of the Kings County Medical Society comprises 65,000 volumes and it is proposed to add to this several other medical libraries in Brooklyn Dr Burton Harris, Brooklyn, is chairman of the committee which has this matter in hand

New York City

Typhoid Carriers Discovered—The Department of Health of Brooklyn has discovered thirty-five carriers of typhoid fever, most of whom are adults

Appropriation for Braces—The board of aldermen adopted a resolution, September 12, appropriating $50,000 for the purchase of braces and after-care of children suffering from infantile paralysis The appropriation will be divided between the Bellevue and Allied hospitals and the Department of Public Charities

Personal—Dr Louis Heitzmann has been appointed professor of pathology and bacteriology at Fordham University School of Medicine——Dr Robert W Lovett, professor of orthopedic surgery in Harvard Medical School, delivered an address before the New York Academy of Medicine, October 5, on "The Management of Poliomyelitis with a View to Minimizing the Ultimate Disability"

For the After-Care of Victims of Poliomyelitis—The directors of the Day Home and School for Crippled Children have declared their intention to keep their home on City Island, Pelham Bay Park, which is now used only as a summer home, open all winter for the care of as many children crippled by infantile paralysis as their means will permit They are desirous of securing additional funds for this purpose

Poliomyelitis—Up to September 30, 9,029 cases of poliomyelitis had been reported in the city, with 2,286 deaths The new cases number nineteen, with four deaths On this day there were reported to be 2,131 cases in the various hospitals——Surg Lunsford D Fricks of the United States Public Health Service, who has been inspecting interstate travel through New York, was recently ordered to Boston to assist the health commissioner of Massachusetts in the fight against infantile paralysis in that state——Though the public schools were opened, September 25, many thousands of children were absent and the department of education has instructed truancy officers to be lenient in the enforcement of the truancy regulations for a couple of weeks, until parents can feel assured that all danger of contracting poliomyelitis in the schools is past

Committee on After-Care of Infantile Paralysis—A committee consisting of orthopedic surgeons and social workers has been formed for the purpose of caring for cases of infantile paralysis, with headquarters at 289 Fourth Avenue The executive committee is as follows Dr Thomas B Riley of the Brooklyn Bureau of Charities, chairman, Oliver H Bartine, superintendent of the Hospital for Ruptured and Crippled, vice president, Dr Henry W Frauenthal, surgeon-in-chief in the Hospital for Deformities and Joint Diseases, Dr Walter Truslow, Brooklyn, Dr Jaques C Rushmore, Brooklyn, Miss Bessie E Amermann, Henry C Wright, deputy commissioner of charities, Mrs Fanniebelle Curtis, Charles B Grimshaw, Dr Samuel Kleinberg James A Perkins and Dr Benjamin P Farrell The committee has engaged Miss Miriam T Sweeney of Boston to teach nurses and masseurs the best methods of treating muscles injured by the disease

Work of the Burke Foundation—The report of the first year's work of this new field of social service has just been made public This institution was founded and endowed by John Masterson Burke and is known as the Winifred Masterson Burke Relief Foundation The object of the institution is to provide a home for convalescent patients until they shall be able to resume work, and also to prevent sickness and invalidism by providing a short period of rest, appropriate food and freedom from worry and care to those in need of this assistance The capacity of the institution has been gradually increased during the year until there are now 220 beds There have been 4 054 patients admitted during the year, and 83,472 days' treatment given There is also a branch institution for boys and colored persons which has a capacity of fifty beds Dr Frederick L Brush, formerly superintendent of the New York Postgraduate Medical School and Hospital, is the general medical superintendent The admission department is at 325 East Fifty-Seventh Street The work is conducted in cooperation with the various hospitals of the city A special feature is the care of convalescent cardiac patients and their return to suitable employments

NORTH CAROLINA

Personal—Dr John Thames, formerly assistant superintendent of health of Wilmington, has been elected city health officer of Winston-Salem, and has assumed his official duties ——Dr F Arnold Stovall Wilmington has been appointed physician of New Hanover County——Dr Joseph Akerman, Wilmington, has been appointed a member of the faculty of the Medical College of Georgia, Augusta, and will be in charge of the hospital maintained in connection with that institution——Dr Reuben A McBrayer, Sanatorium has been commissioned first lieutenant M C, U S Army, and assigned to service with troops on the Mexican frontier

OHIO

Two Years' Residence Required—The Ohio State Medical Board has adopted a resolution requiring that all physicians who seek to register in that state through reciprocity must have resided and practiced at least two years in the state in which they hold their certificate Several states require this

Limited Practitioners' Qualifications—An analysis published recently of the preliminary education of 150 drugless practitioners licensed in Ohio recently under the Platt-Ellis law shows that 121, or 80 7 per cent, had less than a four-year high school education and that for 39, or 26 per cent, there was no evidence whatever of preliminary education

New Entrance Requirements—The Ohio State University, College of Medicine announces that beginning in September, 1917, its entrance requirements will be increased to include as a minimum the sixty semester hours of premedical work as required for the science-medical course The Bachelor of Science degree will be conferred on completion of the second year in medicine and the degree of Doctor of Medicine at the end of the fourth year in medicine

Public Health Federation Reorganization—Reorganization of the Ohio Public Health Federation was effected, September 19, and by acceptance into membership of the Ohio Hospital Association and Ohio Association of Graduate Nurses the membership of the federation was raised to 11,000 Plans were completed for the establishment of state headquarters in Columbus to be in charge of G V Sheridan, executive secretary of the Ohio State Medical Association who was elected secretary of the reorganized federation The executive council consists of Drs Willard B Carpenter Homer C Brown, D D S, Robert G Patterson Prof Edward Spease, and Drs John H J Upham, Frederick O Williams, and David White

Personal—Dr Joseph S Garwood, North Lewisburg, is reported to be critically ill at the Champaign County Hospital——Dr John R McDowell Zanesville, has been appointed chief of the Division of Public Education and Tuberculosis of the state board of health——Dr Charles A L Reed, Cincinnati, delivered an address before the Butler County Medical Society at Hamilton September 27, on 'Epilepsy, Its Cause and Treatment"——Dr Charles H Quayle, Madison, sustained a fracture of the hip when the automobile in which he was riding collided with a telephone pole September 18——Drs Joseph H Wilson, Bellefontaine, and Henry E Beebe Sidney, sustained painful injuries in an automobile accident near Big Springs September 12——Dr Florus F Lawrence Columbus has been ordered to duty at Fort Sam Houston, Tex

Physicians and Blackmailers—Probably no class of professional men are so constantly exposed to the danger of blackmailing as are physicians Not only is the work of a physician necessarily of such a nature as to make him particularly open to such attacks, but the professional reputation of a physician more than any other class of professional men except possibly the ministry is more easily and completely destroyed by such charges, whether substantiated or not The number of physicians who are victimized each year can only be guessed at Associated Press dispatches from Cincinnati state that an attempt to blackmail Dr Charles A L Reed of that city resulted in the exposure and arrest of the alleged blackmailer Evidence was secured through the use of dictaphones and concealed detectives The woman is under arrest and indictment

Cincinnati

Popular Subscriptions for Resident Physicians—Safety Director Friedlander approved of the plan of Dr H Kennon Dunham to raise by popular subscriptions enough money to employ three resident physicians at the Municipal Tuberculosis Sanatorium at salaries of $2,000, $1,500 and $1,200, respectively

Personal—Dr Carlton H Andrew of the staff of the Cincinnati General Hospital has been appointed assistant superintendent of the State Hospital for the Criminal Insane, Lima——Dr Earl A Martin, assistant receiving physician at the Municipal Tuberculosis Association, has resigned to enter the United States Public Health Service

PENNSYLVANIA

Personal—Dr George J Van Vechten has been appointed director of the department of health of Scranton——Dr D Duer Reynolds, resident physician at the Bryn Mawr Hospital, has been placed in charge of a hospital for infantile paralysis near Bryn Mawr

State Genito-Urinary Clinic—The state health department has announced the establishment of a state genito-urinary dispensary at 1630 Poplar Street This will be conducted for the benefit of the poor and needy afflicted with genito-urinary diseases The idea of its establishment by the state health department is to relieve the physician of the care of the many deserving but impecunious poor suffering with genito-urinary infections, the prompt attention and proper treatment for such conditions where it might be otherwise necessarily neglected and, thereby in the rapid elimination of the danger of contagion, to employ the most effective method for the reduction of venereal disease throughout the state Dr John L Laird will be in charge of the dispensary

Philadelphia

Quarantine Being Lifted—Dr Wilmer Krusen, director of the department of health and charities officially sent notice September 26, to pastors and superintendents of Sunday schools that the quarantine on churches were lifted, October 1 Schools were opened, October 2, and on October 7 children under 16 years of age will be permitted to attend motion picture theaters

Personal—Dr Leon Brinkmann has been appointed visiting surgeon to the Jewish Hospital——Dr Melvin M Franklin has been made consulting surgeon to the same institution——Dr Ardrey W Downs, formerly professor of physiology at the Medico-Chirurgical College, has accepted a position as head of the department of physiology at McGill University Montreal——Lieuts Joseph V Klauder and John B Ludy M R C U S Army, have been placed on the active list and assigned to duty in the Hawaiian Department——Dr J Chalmers DaCosta has been appointed chief consulting surgeon of the Philadelphia General Hospital, succeeding the late Dr J William White——Dr Ross V Patterson recently appointed dean of the Jefferson Medical College, to succeed Dr James W Holland, asumed his new office September 25——Dr R Tait McKenzie, physical director of the University of Pennsylvania, who has been in England all summer serving as a major in the Medical Corps of the British army arrived in New York September 24——Dr S Lewis Ziegler has been elected a member of the board of trustees of Bucknell University

Infantile Paralysis—September 27, Mrs E T Stotesbury made the first contribution for the care of infantile paralysis convalescents by the Home Relief Division of the Emergency Aid The amount was $1 000 and contributions received up to September 20 have reached $12 338 53 This money will be used for the maintenance of the County Branch of the Children's Hospital at Wynnefield in which children of the poor recovering from infantile paralysis are receiving treatment——It was announced, September 26, by Dr Wilmer Krusen, director of the department of health and charities that a city committee on the after-care of infantile paralysis cases would be organized The Home Relief Division of the Emergency Aid of Pennsylvania has been asked to appoint the committee whose work will be the systemic care of all cases of infantile paralysis which have passed the acute stage The committee will obtain the cooperation of social service agencies for the purpose of ascertaining the ability or lack of ability for the families to bear the financial burden of the treatment Through the public the Home Relief Division has already promised to finance the orthopedic departments of several of the hospitals while they are taking care of infantile paralysis cases

VIRGINIA

Professional Building for Richmond—A professional building is being erected in Richmond It is located at the corner of Fifth and Franklin streets, will be seven stories in height and will be devoted exclusively to physicians, dentists and allied professions The professional building corporation has been chartered, with the following officers president, Dr Lawrence T Price, vice president Dr J McCaw Tompkins, and secretary-treasurer, Mr A R Holderby The building will cost about $175 000

Personal—Dr Lucien Lofton has been appointed a district physician of Richmond, succeeding the late Dr James F Crane——Dr Robert C Bryan, Richmond, who has been on duty with the American Ambulance in Paris for several months, has returned——Dr James W Reed, Ocean View, has succeeded Dr William P McDowell as a member of the Norfolk County Board of Health——Dr Henry S Stern has been appointed medical examiner of the Department of Health of Richmond, succeeding Dr Bronson E Summers, resigned——Dr J Raymond Gorman, formerly of Richmond, has been appointed superintendent of the Locus Valley Emergency Hospital L I, N Y——Dr William F Drewry Petersburg, has been appointed a member of the state board of health succeeding the late Dr Otho C Wright, Jarratt

WASHINGTON

Personal—Dr Frederick W Rinkenberger, Tacoma, sailed from New York, September 14, to take a position in the German Field Hospital at Deutsch-Eylau West Prussia——Drs John M Semple, Spokane, and Park Weed Willis Seattle have been appointed members of the advisory board on medical education of the University of Washington

Antituberculosis Association Meets—At the annual meeting of the Washington Society for the Prevention and Relief of Tuberculosis held in Everett recently, the following officers were elected president, Dr Christen Quevli, Tacoma, vice presidents, Drs Wilson R Johnston, Spokane, and Clarence A Smith Seattle, secretary, Prof John Weinziri, Seattle, and treasurer, Mr J V A Smith, Seattle

WEST VIRGINIA

Sanatorium to be Reopened—Directors of the Ohio County Antituberculosis League held a meeting at Wheeling September 15, and decided that on the appropriation of $8,000, made by the county for the support of the institution, the sanatorium would be reopened and permanently maintained

Personal—Dr John N Simpson, dean of the University College of Medicine Charleston, has been made director of the chemical laboratory——A G Cook Morgantown, has been appointed, by the state health council, state chemist and assistant bacteriologist, succeeding Prof O Oughsoorn, resigned

WISCONSIN

Personal—Dr Charles M Gould, health commissioner of Superior, has been granted a three months' leave of absence on account of ill health——Dr George D Whiteside Plover, announces his candidacy for the General Assembly

Sterilization by Law—Sterilization operations have been performed on thirty inmates of the State Home for Feebleminded, Chippewa Falls, by Dr Alfred W Wilmarth head of that institution, under the direction of the state board of control and in accordance with the law passed by the legislature in 1913, providing for such operations

Hospital Notes—The new Milwaukee Infants' Hospital was formally opened, September 7 The building has been erected at a cost of $50,000, and is a two story fresh air building each floor being divided into two units——The Plymouth Hospital and Training School has been incorporated without capital stock Its object is the care of sick and needy of Sheboygan County

Senn Bust Given to Museum—A bronze bust of Dr Nicholas Senn was presented to the Wisconsin Historical Museum, Madison, by Dr Emanuel J Senn of Chicago Among other gifts recently presented to the museum by the Senn family are the favorite scalpel of Dr Senn and surgical instruments used by him when he began his practice as a country practitioner near Fond du Lac in 1869

CANADA

Infantile Paralysis—Infantile paralysis is spreading in Ontario, and the provincial health authorities are taking steps for a more vigorous handling of the situation It will probably be found necessary to close the picture theaters and schools to all children under 14 years of age During September there have been forty-nine cases, with five deaths In August there were forty-four cases with five deaths July had a record of twenty cases, with three deaths There was one case of a man 50 years of age The cases occur pretty generally throughout the province

Personal—Mr Irving Heward Cameron, professor of surgery in the University of Toronto, has arrived home in *Toronto after a year's service as head of the surgical wards* of the Ontario Military Hospital, Orpington, Kent County, England——Dr John J Mackenzie, professor of pathology in the University of Toronto, has returned from Saloniki, where he has been working with the University of Toronto Base Hospital——Dr Roland W Young, Oshawa, Ont, who was for a time doing hospital work at Malta is now medical officer on a transport between Alexandria and Saloniki——Capt F B Bowman, Canadian A M C, has been placed in command of No 2 Canadian Mobile Laboratory, stationed at Folkestone, England

Medical Societies—The Hamilton Medical Society began its work for the season early in September, when Dr Lewellys F Barker was present from Baltimore and delivered an address——The Academy of Medicine, Toronto, began its winter session by a dinner in the York Club tendered the members by the president, Dr Herbert A Bruce, who is abroad——The Medical Society of New Brunswick has elected the following officers president, Dr Suther C Murray, Albert, vice presidents, Drs George G Corbet, St John, and Frederick H Wetmore Hampton, treasurer, Dr William E Gray, Milltown, recording secretary, Francis J Hogan, St John, and corresponding secretary, Albert E Macaulay, St John——The Association of Medical Officers of Health of Nova Scotia at their recent annual meeting elected the following officers president, Dr George E DeWitt, Wolfville, vice presidents, Drs John J Cameron, Antigonishe and Willis B Moore, Kentville, and secretary, Dr William H Hattie, Halifax

Hospital News—As the Dominion Hospitals Commission has its system of convalescent hospitals well organized for returned soldiers throughout Canada, it is further understood that there will also be established in the immediate future a chain of hospitals across Canada for surgical treatment as well At the present time there are said to be from 10 000 to 11,000 Canadian soldiers scattered throughout the hospitals of the United Kingdom Many of these could be sent to Canada for surgical treatment and so relieve the hospitals abroad for immediate cases Canada bears all the charges for treatment of her sons in the old land——Lieut-Col Charles W F Gorrell has resigned the command of the Duchess of Connaught Hospital in England and his place has been taken by Lieut-Col David W McPherson, Toronto This leaves a vacancy in the command of the Ontario Military Hospital at Orpington——Command of the Bramshot Hospital, England, has been given to Col Roderick C McLeod of the camp of St Francis Xavier Unit which has been increased to the strength of a general hospital——Lieut-Col Herbert A Bruce Toronto, who has been abroad making a special inspection of all the Canadian hospitals in England and France, is said to have criticized some of these hospitals rather severely It is understood Dr Bruce will not return to Toronto until after the first of the year——An interesting hospital case is being tried in the courts of New Brunswick The Moncton (N B) Hospital is an incorporated institution and at a meeting held early in the year the management passed a by-law by which all persons who subscribed $1 would be entitled to vote for governors at the annual meeting The term of three trustees has expired, and taking advantage of the by-law some persons appeared paid the $1, voted and three new trustees were elected The validity of the above-cited by-law is now disputed hence the action in the courts

GENERAL

Southern Physicians to Meet—The annual meetings of the Southern Medical Association and the National Association of Railway Surgeons are to be held in Atlanta, Ga in November The chairman of the committee of arrangements for the Southern Medical Association is Dr Stewart R Roberts Candler Building, and Dr Thomas H Hancock is in charge of the arrangements for the railway surgeons

National Safety Congress—The fifth annual safety congress will be held at the Hotel Statler, Detroit, October 17 to 20, inclusive At this meeting the latest developments of accident prevention and health conservation and practical problems of many industries will be discussed Sectional meetings will be held on three afternoons An interesting commercial exhibit of safety devices will be on view at the Detroit Armory

Roentgenologists Elect New Officers—At the annual meeting of the American Roentgen Ray Society, held in Chicago, September 28 to 30 the following officers were elected president, Dr Lewis G Cole New York, vice presidents, C S Blair, Chicago, and Dr Howard E Ruggles, San Francisco, secretary, Dr William H Stewart, New York, treasurer, Dr William A Evans, Detroit, and editor, Dr James T Case, Battle Creek, Mich

Obstetricians Hold Meeting—The twenty-ninth annual convention of the American Association of Obstetricians and Gynecologists was held in Indianapolis, September 25 to 27, and the following officers were elected president, Dr John W Keefe, Providence, R I, vice presidents, Drs Thomas Reder, St Louis, and Charles L Ill, Newark N J, secretary, Dr E Gustav Zinke, Cincinnati (reelected), and treasurer, Dr Herman E Hayd, Buffalo (FOX)

New Medical Fraternity Officers—At the annual meeting of the National Chapter of Phi Rho Sigma Fraternity held in Ann Arbor, Mich, September 22, Dr Clifford G Grulee, Chicago, was elected president, Dr C Guy Lane, Woburn, Mass, vice president and editor of the Phi Rho Sigma *Journal*, Dr F E Lacy, Chicago, secretary, Dr William M Joyce, Chicago, treasurer, and Dr Charles S Wilson, Tacoma, Wash, recorder The next meeting will be held in Philadelphia

New Officers for Missouri Valley Society—At the annual meeting of the Medical Society of the Missouri Valley, held in Omaha, September 21 and 22, the following officers were elected president, Dr Charles R Woodson, St Joseph Mo, vice presidents, Drs E Winnett Rowe, Lincoln, and Carl B Hickenlooper Winterset, Iowa, secretary, Dr Charles Wood Fassett, Kansas City, Mo (reelected), and treasurer, Dr Oliver C Gebhart, St Joseph, Mo (reelected) Keokuk was selected as the next place of meeting

Prevention of Infant Mortality—The seventh annual session of the American Association for the Study and Prevention of Infant Mortality will be held in Milwaukee, Wis, October 19 to 21 The subjects that will be discussed at the conference include the work of government authorities for the control and prevention of infantile paralysis during the epidemics of the current years, measles and whooping cough as factors in infant mortality, care available for mothers and babies in rural communities, problems of prenatal care, ways and means of educating the public in the campaign for the prevention of infant mortality, public school education in high schools and vocational schools colleges and university extension work, for the prevention of infant mortality

Hospital Officers Meet—The eighteenth annual meeting of the American Hospital Association was held at the Bellevue-Stratford Philadelphia, September 26 to 29, and the following officers were elected president, Dr Robert J Wilson, New York vice presidents, Dr Andrew R Warner, Cleveland, and Miss Georgia M Nevins, Washington, D C, secretary, Dr William H Walsh Philadelphia, treasurer, Asa Bacon, Chicago and trustees Richard P Borden Fall River, Mass, Dr Winford H Smith, Baltimore, and Miss Mary L Keith, Rochester, N Y The plans mapped out for the organization include a nation-wide crusade, thorough remedial legislation against the baby farms the placing of all hospitals under state or government control or both, and the standardization of hospitals Cleveland was elected as the next place of meeting

Bequests and Donations—The following bequests and donations have recently been announced

Pennsylvania Society to Protect Children from Cruelty, and St Vincent s Home and Maternity Hospital, Philadelphia each $5 000 St Joseph s and St Agnes hospitals Philadelphia each $1 000 by the will of Mrs Carolina Earl White

Newport (R I) Hospital for needed improvements in the buildings, a donation of $10,000 from Mrs Harry Payne Whitney $5 000 donation from Mr and Mrs Vincent Astor

To build an emergency hospital at Naragansett R I a donation of $50 000 by John H Hanan

Children s Hospital, Boston and Portsmouth (N H) Hospital, each $5 000 by the will of Sara F Turner Brookline Mass

Massillon (Ohio) Hospital a donation of $50,000 by C M Russell

Samaritan Hospital Philadelphia $2 000 by the will of Steven B Colliday

Children s Hospital Philadelphia an endowment of $100 000 and an additional sum of $10 000, the income of which is to be used for Christmas presents and the annual dinner for patients and attaches of the institution

Pennsylvania Epileptic Hospital and Colony Farm $25 000 United Charities of Hazleton, Pa, the income to be used to continue the salary of nurses, $15 000 Philadelphia Hospital and Infirmary for Nervous Diseases, $50,000 by the will of Eckley B Coxe Jr

FOREIGN

Memorial to Robert Koch—The *Norsk Magazin for Lægevidenskaben* says that the memorial to Robert Koch was recently unveiled at Berlin, six years after his death, with much ceremony It portrays in antique style the scientist in his working garment Owing to the war the celebration was exclusively German, G Gaffky presiding He was one of Koch's earliest pupils and collaborators

New Swiss Insurance Law—Foreign life insurance companies doing business in Switzerland will be affected if a proposed new law is enacted By the provisions of this law foreign companies writing business in Switzerland will be required to deposit with the National Bank of Switzerland acceptable securities to the full amount of their reserves for Swiss business, and three fourths of this deposit must be in Swiss securities Swiss companies will be required to cover one half of their premium collections in the same manner

Inauguration of Institute for Vaccines, Bacteriology and Chemistry at Buenos Aires—With much ceremony, this new institute was recently inaugurated Penna, chief of the public health service, Malbran, chief of the bacteriologic service, and various professors with university chairs in these specialties, all delivered addresses Magnin, chief of the chemical department, reported that already he had researches under way which might aid materially in remedying the scarcity of imported drugs A number can be made and many are now being made in the workrooms connected with his department An isolated pavilion has been set apart for a training school in applied chemistry The national board of health has had a chemical department since 1880, but this new triple institute is said to be equipped for the science and needs of tomorrow as well as today

Canadian Military Surgeons at Paris—The medical department of the University of Paris gave a reception recently in honor of the Canadian military surgeons serving in France They form a branch of the Canadian Association of Military Medical Officers and are to hold monthly meetings at Paris The *Presse Médicale* reproduces the addresses at the reception, Landouzy as dean of the university welcoming them, and de Martigny as president of the association responding Albee of New York was present as an honorary member and his method of bone plastics was demonstrated by Pariseau, an enthusiast in the method Landouzy recalled that at the last, the thirteenth annual French medical congress, held in 1913 it was decided to hold the next at Brussels and one after that at Montreal The war has postponed all the meetings indefinitely

Inscriptions on Monuments and Memorials to Physicians—Prof R Blanchard of Paris has recently issued the first part of a work on which he has long been engaged as a contribution to the history of medicine It is a compilation of epitaphs and inscriptions of all kinds on monuments and memorials, temples, statues and busts, and simple inscriptions, relating to members of the profession and biologic sciences The full title is "Corpus inscriptionum ad medicinam biologiamque spectantium' This first part forms a handsome volume containing 1,258 inscriptions The *Société française d'histoire de la médecine* wanted to undertake the work, but had no funds for the purpose, and Blanchard has assumed all the expense and, except for a few subscribers, is distributing the work gratuitously to libraries and persons especially interested in the history of medicine He appeals to such the world around to collect material for the next part He pleads for cooperation from members of the profession, urging them to send him a copy of all such inscriptions of historical value in their vicinity, reproducing the exact words punctuation, alignment, capital letters with brief description of monument, etc, and photograph of it when possible The name of the compiler is published with each inscription Address Prof Raphael Blanchard, 226 Boul St Germain, Paris

Deaths in the Profession Abroad—E Nuñez, assistant professor of gynecology and surgical pathology at the University of Havana, and secretary of the national board of health, aged 44 To his initiative is due much of the progress realized in public health matters throughout Cuba in the last few years, especially in better provisions for young children He was long on the editorial staff of the *Revista de Medicina y Cirugia* and founded the *Prensa Medica* in 1910—— Our Norwegian exchange reports the death of Paul von

Bruns, the noted German surgeon, who followed his father as professor of surgery at the University of Tubingen Surgery of the extremities was perhaps the field in which he was most interested, but he has done important work in surgery of the larynx and thyroid and in war surgery His name has been carried far and wide by his *Beitrage zur klinischen Chirurgie,* which he founded in 1883 and has published since Its approaching hundredth volume had been bespoken by his pupils to be a *Festschrift* in honor of his seventieth birthday, July 2 He also, with Bergmann and Mikulicz, published the "Handbuch der Chirurgie" and continued Bergmann's "Deutsche Chirurgie"——From the same source we learn of the death of H Chiari, professor of pathologic anatomy at the University of Strasburg He was the son of the Vienna gynecologist, J B Chiari, and was connected with the University at Prague until 1906——E Lang, the well known professor of dermatology and syphilis at the University of Vienna, aged 75——G Matti, chief of the medical service of the National Guard in Argentina, president of the Touring Club Argentina, at one time inspector general of pharmacies, and formerly collaborator on the *Semana Medica* of Buenos Aires——N Reynal, the dean of the profession in Argentina, aged 86 He founded the Buenos Aires Medical Society, and one of his sons, now deceased, is said by our Argentine exchanges to have been the inventor of the tracheotomy cannula——W Stewart at his home in Urchin, Paraguay, aged 86 Educated in London, Perth and Edinburgh, he served as a surgeon during the Crimean War, and ten years later was surgeon-general to the Paraguayan army In the interval he had been private secretary to President Carlos Lupez In 1869 he returned to Edinburgh and studied there the antiseptic technic under Lister, introducing it on his return to Paraguay at Asuncion which was he thinks, the second place in the world to adopt Listerism Dr Stewart was for many years British consul in Paraguay

PARIS LETTER

Paris, Sept 7, 1916

The War

BACTERIOLOGIC CONTROL AND THE SUTURE OF WAR WOUNDS

Bacteriologic control of the course of war wounds consists in regular determination of the microbic content of the exudate For this purpose, a microscopic count is made of the microbes in a smear, the examination being repeated every two days Dr Depage of Brussels has carried out this control systematically in a hospital at La Panne since June 1, 1916 As a result of his examination of 500 cases, Depage is of the opinion that the bacterial control permits of following the evolution of an infection and indicating the precise moment at which suture may be attempted with the best chance of success There are three periods in an infection of the wound (1) a period of acute infection, during which microbes are numerous and have a maximum virulence Suture performed at this stage will inevitably be followed by failure, if not by worse (2) A period of attenuated infection during which the microbes are fewer in number and less virulent Suture at this stage will rarely succeed ordinarily, a part gives way and there is a possibility of reviving the microbic virulence and favoring the return of acute infection (3) An aseptic period at which suture has every chance of success It is, however, prudent to wait until two or three examinations have given negative results before practicing suture Where there are bony lesions and especially fractures, this delay must be still further prolonged Depage and his collaborators have, since June 1, practiced 137 secondary sutures in 108 cases, each of these cases having previously been subjected to bacteriologic control A certain number had been sutured before the third or aseptic stage had been completely established In no case did any complications arise to retard the healing of the 137 sutures, 112 being entirely successful, 23 partially successful and 2 unsuccessful

THE EFFECT OF DAKIN'S FLUID ON FRESH WOUNDS

At one of the last sittings of the Societe de chirurgie de Paris, Dr Pierre Delbet, professor of clinical surgery at the Faculte de medecine de Paris, communicated the results of researches on the action of Dakin's fluid on fresh wounds made by him in a hospital at the front He had already made observations on the action of hypochlorites on infected wounds and had communicated the results to the society (The Journal, Dec 11, 1915, p 2101) He wished to know if this solution would inhibit the growth of bacteria in wounds treated very early He samples the exudates, and examines them bacteriologically before and after the action of Dakin's fluid The conditions were favorable, as the wounds were treated a few hours after their infliction Nevertheless, only two wounds out of nine, in which no bacteria had been discovered before treatment, remained aseptic The one was not absolutely aseptic, but practically so The other was under observation for only three days In the seven cases bacteria appeared in the wound after two or three days of intermittent irrigation with hypochlorite One wound of the knee required secondary resection on the seventh day, another patient was in an indifferent condition at the end of several days The remainder progressed well and it was possible in their case to bring together the lips of the wound, two by suture and two by bandages On the whole the clinical results were poor In four cases after free resection, a secondary apposition of the lips of the wound was possible, but of two knee wounds, one required secondary resection, one thigh wound did badly What Dr Delbet wished to know was whether, in fresh wounds in which it is not possible to detect bacteria, Dakin's solution is capable of inhibiting the growth of the latter In fact, this has only happened twice in nine aseptic cases The history of the hypochlorite question appears to Delbet perfectly simple First, Labarraque's solution, rendered less irritating by modification which deprived it of some of its germicidal power, was held capable of sterilizing wounds, then the Carrel-Dakin communication to the Academie des Sciences and the Tuffier circular in which the expression "free opening" is not even mentioned appeared In the second phase, the necessity of early and free exposure was proclaimed This was a confession of failure, for if free exposure is necessary, the hypochlorite does not sterilize In the third period, free exposure and irrigation were no longer considered sufficient Resection of the whole track of the projectile under general anesthesia was recommended In this evolution, there is one constant, hypochlorite solution and several variables, namely, different methods and surgical treatment of wounds The favorable results should not be attributed to the constant but to the variables It is, moreover, unreasonable to believe that Dakin's fluid has an antiseptic action for Delbet has shown that in wounds treated as above described, the gauze employed to maintain contact of the "germicide" with the wound is richer in microbes than the exudate itself This apparent paradox finds its explanation in previous experiments of Delbet, which proved that hypochlorites act on the albumin molecule in such a way as to render it more susceptible to attack by microbes Delbet has convinced himself that simple mechanical cleaning of the wound, excision of the orifices preferably of the whole surface of fresh wounds, followed by immediate reunion, is capable of producing healing by first intention without the help of any antiseptic

An Alleged Marvelous Remedy for Burns

I was very much surprised to learn of a so-called miracle which had been obtained according to the "War Letters of an American Woman," in one of the hospitals in the vicinity of Paris by the use of a pharmaceutical specialty, sold under the name of ambrine [The Journal, Aug 12, 1916, p 516 and 535] In spite of the notoriety of which it is the object the remedy in question has not had as great a vogue as it would have merited if it had really had as marvelous effects as "An American Woman' affirms It was left to America to herald these marvelous effects—completely unknown in France! So true is it, as the French proverb says, "No one is a prophet in his own country"

LONDON LETTER

London, Sept 18, 1916

The War

A MOTOR FIELD OPERATING THEATER

The latest achievement of medical science for the succor of wounded soldiers is a motor field operating theater, which is being presented to the Italian government by the Wounded Allies Relief Committee of this country The vehicle, which is the first movable operating theater to be constructed has been designed by a well-known surgeon and prominent politician, Sir William Collins The huge body is mounted on a 4-ton chassis of 25 horse power Its outstanding characteristics are completeness and compactness, with a view to use in any weather and in any climate The entrance for the surgeon and his assistants is from behind the driver's seat, and leads immediately to a small compartment which is devoted solely to the sterilization of water, instruments, and complementary vessels while storage is provided for dressings, lotions, splints and other surgical adjuncts At the rear of the compartment, and separated by a sliding door, is the theater itself, which is 9 feet 6 inches long, 6 feet wide, and 6 feet 8 inches high so that ample space is provided for complete freedom of action on the part of the operator The only fixed furniture in the theater is a copper sink, over which water and lotion taps have been conveniently placed The walls have been finished in white enamel, and the flooring is sheet lead The latter material, although somewhat heavy, has been employed on account of its imperviousness to rust Light is obtained by means of wire glass from the roof which opens by simple mechanism for the purpose of ventilation, although lowered sides and electric fans are also provided for the same purpose The 100 candle power electric lamps have been installed, and a Roentgen-ray outfit will be carried in a separate van Sir William Collins became convinced of the need of motor field operating theaters when he visited Belgium in 1914 His idea is to bring the hospital to the patient instead of the patient to the hospital, wherever it is found to be practicable particularly in abdominal cases, in which the rate of mortality is very high unless immediate attention is given Again field theaters will enable the army surgeons to arrest hemorrhage and to anticipate sepsis Sir Alfred Keogh director general of the Army Medical Corps and Sir George Makins, consulting surgeon to the army in the field, have inspected the vehicle and expressed their appreciation of its value as a means of saving life and minimizing suffering A request has been made by the Belgium government for a duplicate The cost is approximately $5,000

SPHAGNUM MOSS AS A DRESSING

The vast demand for surgical dressings has led to the revival of the use of sphagnum moss, which was suggested long ago but had fallen into disuse This moss grows abundantly in England and Ireland, and was suggested many years ago as an economical substitute for absorbent cotton Indeed, Joyce, the historian, says it was used as a dressing for the wounds of battle in Ireland in 1014 It grows so abundantly that the supply is inexhaustible It has three great advantages over absorbent cotton cheapness, absorbency, and the fact that its preparation is so simple that it can be carried out entirely by unskilled workers The moss is much more absorbent than cotton, and will take up about twelve times its weight in water It absorbs moisture very quickly and evenly, distributing it over the whole surface of the dressing whereas absorbent cotton will absorb at one point leading the moisture through at that point, while the rest of the wool may remain dry The even absorption of the moss is one of its principal virtues for this means that the patient is saved a good deal of disturbance and manipulation, since the dressings do not require to be changed so frequently The preparation of the moss is simple After being gathered it is spread out on the heather or grass near the spot where it grows and left to dry in the open air and wind Another plan is to hang it out on a clothes line in open bags made of a very coarse open muslin or sacking, or to spread it out on sheets in gardens or on lawns, so that it is easily carried indoors at night, or during rain Experiments have been tried of drying the moss artificially in an oven or in the drying room of a laundry, but neither plan is very successful as when it is rapidly dried it becomes very dusty and brittle and the workers who make it into dressings find it both wasteful and unpleasant to handle It must be dried slowly, either in the open air, which is by far the best method, or by spreading it out indoors For use it is put into bags of various sizes made of this muslin The bags are loosely filled and should be perfectly flexible and soft, so that they may be bandaged on a limb with comfort, as allowance has to be made for the way in which the moss swells up when brought into contact with moisture There are four varieties of moss dressings—sterilized, unsterilized sublimated, or sublimated and compressed Recent reports show that in many cases the moss is much preferred to absorbent cotton and every day hospitals are being added to the list of those which already use it regularly To many of the poorly equipped French hospitals, which can in no way compare with the better provided British hospitals, the moss has proved of the utmost value when a surgeon has once been persuaded to give it a trial

HOSPITAL UNIT FROM HARVARD

A fully equipped base hospital unit, consisting of thirty surgeons two dental surgeons and seventy-five nurses, has left for France in charge of Lieutenant-Colonel Jones of Boston The hospital is the result of an offer made last November by the Medical Senate of Harvard University to the British government, and its services are to be available until the end of the war Associated with Harvard in providing the hospital are Yale, Columbia, Princeton, Johns Hopkins and other universities The movement is due chiefly to the joint efforts of Sir William Osler and Mr Robert Bacon, formerly United States ambassador at Paris The Harvard unit will work under the direction of the army medical corps

Free Distribution of Salvarsan

The Local Government Board has issued a circular to county councils in which are laid down certain rules for the treatment of syphilis under the new scheme (described in a previous letter) The board will supply salvarsan or its approved substitutes free for the purpose of injection, and will give it to all who can produce satisfactory evidence of training or experience in the administration of these drugs It is recommended that the health officers shall distribute the drugs and satisfy themselves, before issuing a supply, that the applicant is a registered physician with one or other of the following qualifications that he (1) holds a certificate of having acted as a clinical assistant in a hospital department recognized by the board in connection with a local authority s scheme for the diagnosis and treatment of venereal diseases in their communicable stages, (2) holds a certificate of satisfactory attendance at a course of instruction in the diagnosis and treatment of venereal diseases (including intravenous medication) in such a hospital department or in a recognized medical school or postgraduate college, (3) is or has been within the last five years a member of the permanent staff of a hospital managed by a committee and containing not less than fifty beds, and (4) produces satisfactory evidence other than that indicated that he has had adequate experience in the administration of these drugs by intravenous injection The scheme is evidently a compromise, as such it is good, better than might have been expected Probably the appointment of a whole time specialist in each area to whom physicians could send their already notified patients for injection would have been the ideal method Against this, however had to be set the reluctance of the patient to face a stranger, and the natural reluctance of the physician to take any course which might savor of breach of confidence

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Marriages

Dana Winslow Atchley M D, New York, to Miss Mary C Phister of Chicago and Newbury, Mass, at Newburyport, Mass, September 22

Harry Cornelius Albert Beach, M D, Columbus, Ohio, to Miss Marguerite Carolynn Schairer of Zanesville, Ohio, September 7

Ernest Otis McCleary M D, Ordway, Colo, to Miss Edna Frances Woodard of Colorado Springs, September 14

Theodore Foster Riggs, M D, Pierre S D, to Miss Catherine Cugle of Baltimore at Pierre, September 8

Arthur Lee Hagler, M D, to Miss Ottie Morgan Maxey, both of Springfield Ill, at St Louis September 9

Edward Parnell Powers M D, Roxbury, Boston, to Miss Alice R Jordan of Brighton, Mass, October 4

Earl Berton Fitzpatrick M D to Miss Josephine Irene Murray, both of Martinez Calif, September 6

Ernest Leonard Posey, M D Van Buren, Ark, to Miss Ethel Smith of Magee, Miss, August 31

Leo Heuler M D, Fellows, Calif, to Miss Hepie Moore of Reynoldsville Pa, at Chicago, June 15

Bernard O Bendixen, M D, Beechwood, Wis, to Miss Olive Stoupe of Milwaukee, recently

Melville Hammond Long, M D, to Miss Ruth Snover, both of San Francisco, September 3

Roscoe Conkling Eaton, M D, to Miss Edna E Moody, both of Chicago, September 28

Sverre Oftedal M D, to Miss Agnes G Halland, both of Fargo N D, September 13

John Hall Lilly M D, to Miss Mae Connor, both of Philadelphia, September 14

Giochino Lavieri M D, to Miss Edna C Gibbs, both of Chicago September 30

Deaths

Adoniram Brown Judson, M D, New York, Jefferson Medical College 1865, College of Physicians and Surgeons in the City of New York, 1868, aged 79, a Fellow of the American Medical Association and American Academy of Medicine, a member and president in 1891 of the American Orthopedic Association, orthopedic surgeon to the outpatient department of the New York Hospital, appointed assistant surgeon, U S Navy, in 1861 and promoted to surgeon in 1866, resigning from the service in 1868, inspector of the New York Board of Health from 1869 to 1877, medical examiner of the New York State Civil Service Commission from 1901 to 1909, author of several treatises on orthopedic surgery and public health, died at his home, September 20

William Henderson Mayfield, M D, St Louis, Washington University, St Louis, 1883, aged 64, president and surgeon-in-chief of the Mayfield Sanatorium, surgeon to Hormington and Sweet Springs sanatoriums, formerly secretary and executive officer of the American Antituberculosis League, formerly professor of materia medica, therapeutics and diseases of children in the St Louis College of Physicians and Surgeons, professor of clinical surgery and president of Barnes Medical College in 1911, died in the Mayfield Memorial Hospital, September 12, from cirrhosis of the liver

Roland Playfair Campbell, M D, Montreal, Que, McGill University, Montreal, 1901, aged 40, demonstrator of pathology and bacteriology in his alma mater, chief of the genito-urinary department of the Montreal General Hospital, a member of the American Association of Pathology and Bacteriology, lieutenant-colonel commanding Field Hospital No 6, Canadian expeditionary force, was killed in France September 19, by the explosion of a shell which struck the dressing station in which he was attending the wounded

George V Calhoun, M D, Seattle, University of Glasgow, Scotland, 1862, aged 78 in charge of the Marine Hospitals at Port Townsend and Port Angeles from 1866 to 1875, contract surgeon in the army during the Civil War, formerly a member of the territorial senate, president of the board of regents of the University of Washington, first president of the State Board of Medical Examiners, and president of the state board of trade, died at his home, September 16

William Sherman Connett, M D, Raton, N M, Denver College of Physicians and Surgeons, 1899, aged 51, formerly a member of the New Mexico Medical Society and president of the Colfax County (N M) Medical Society, one of the organizers and president of the Raton Supply Company, was instantly killed by the overturning of his automobile near Pueblo, Colo, September 17

George Hauer Everhart, M D, Baltimore, University of Maryland, Baltimore 1890, aged 55, chief surgeon and medical director of the Skin and Cancer Hospital Baltimore since its foundation, died at his home, September 17 It was announced at his funeral that the Skin and Cancer Hospital would in the future be known as the Everhart Skin and Cancer Hospital

Josiah Herbert Keenan, M D, Elizabeth N J, New York University, New York 1895, aged 41, formerly a member of the Medical Society of New Jersey, died at his home September 17, from the effects of a gunshot wound of the head, self-inflicted it is believed, with suicidal intent, while despondent on account of the death of his wife

Sanford Hanscom, M D, Somerville, Mass, Harvard Medical School, 1868, aged 75, a Fellow of the American Medical Association, a veteran of the Civil War, a member of the Somerville school committee for twenty years and a trustee of the public library for six years, died at his home, September 20, from heart disease (BU)

Delbert Claude Adcock, M D, Warrensburg Mo, University Medical College Kansas City, Mo, 1904, aged 36 a member of the Missouri State Medical Association and a specialist on diseases of the eye, ear, nose and throat, was found dead in his orchard near Hickman Hill, September 21

Harlem S Smith, M D, Schoolcraft Mich, Georgetown University, Washington D C, 1867, aged 72, formerly a Fellow of the American Medical Association, a member of the Michigan State Medical Society, died at the home of his daughter in Schoolcraft, September 19, from arteriosclerosis

John Henry Woodward, M D, Springfield Mo Eclectic Medical Institute, Cincinnati 1875, aged 68, died at his home September 4 from the effects of a gunshot wound of the abdomen, self-inflicted, it is believed, with suicidal intent, while despondent on account of long continued ill health

Gilbert Tweedie, M D, Toronto, Ont, Victoria University, Coburg, Ont, 1860, aged 89, also a clergyman, from 1891 to 1908 medical superintendent of the Toronto Isolation Hospital, died at his home, from the results of a skull fracture sustained in a fall from a street car four months before

Perry D Covington, M D, Bellefontaine, Ohio, Medical College of Ohio, Cincinnati, 1869, aged 73, a Fellow of the American Medical Association and once vice president of the Ohio State Medical Association, a veteran of the Civil War, died at his home, September 15 from angina pectoris

Thomas Albert Calvin Kephart, M D, Altoona Pa, Western Pennsylvania Medical College, Pittsburgh, 1897, aged 47, a member of the Medical Society of the State of Pennsylvania, while driving his automobile, September 18, was struck by a passenger train and instantly killed

Frank DeWitt Bates, M D, Hamilton, Ont New York Homeopathic Medical College New York, 1876, for many years an oculist and aurist of Hamilton, Ont, died at the City Hospital, Hamilton, August 26, from suppression of urine due to enlarged prostate

Charles P Dutchess, M D, Walton Ind, College of Physicians and Surgeons of Indiana Indianapolis, 1876, a veteran of the Civil War, for forty years a practitioner and druggist of Cass County, Ind, died at his home, September 19, from disease of the brain

Floyd Lee Van Wert, M D, Newcastle Pa, University of Pennsylvania, Philadelphia, 1910 aged 32, a member of the Medical Society of the State of Pennsylvania, was killed September 18, when his automobile was struck by a train

John Stanley Hanlon, M D, Los Angeles, Cooper Medical College, San Francisco, 1905, died at his home, September 4 from the effects of a gunshot wound of the head, self-inflicted, it is believed, with suicidal intent

Thomas B O'Reilly, M D, Philadelphia, Medico-Chirurgical College of Philadelphia, 1893, aged 47, one of the best known practitioners of the northeastern section of the city, died at his home, September 18

John William Was, M D, Chicago, University of Michigan, Ann Arbor, 1878, aged 61, formerly a member of the Illinois State Medical Society, died at his home, September 23, from carcinoma of the intestine

Patrick Francis Hogan, M D, Brooklyn, University of Michigan, Ann Arbor, 1872, aged 65, for several years vaccinator for the Brooklyn Board of Health, died at his home, September 16, from nephritis

Charles William McClintock, M D, Ingersoll, Okla, Central College of Physicians and Surgeons Indianapolis 1898, aged 42, died at the home of his aunt in Ingersoll, September 14 from tuberculosis

Edwin George Sumner, M D, Mansfield Center, Conn Yale University, New Haven, Conn, 1855, aged 86, for two terms a member of the Connecticut Legislature, died at his home, September 13

Ira H Fuller, M D, Columbus Kan, Hahnemann Medical College Chicago, 1884, aged 71, died at his home near Columbus, September 16, from carcinoma of the stomach

Barney Rubin, M D, Los Angeles, Kentucky School of Medicine Louisville, 1893, aged 58, died in the Kansas City Hospital, September 19, after a surgical operation

James William Harrison, M D, Spanaway, Wash, Harvard Medical School, 1868, aged 70, died suddenly from heart disease in North Puyallup, Wash, September 13

John W Estes, M D, Georgetown, Ky, Cincinnati College of Medicine and Surgery, 1890, aged 68, died at his home, September 11 from cerebral hemorrhage

Francesco La Spada, M D, San Jose, Calif, College of Physicians and Surgeons, Chicago, 1894, aged 52, died at his home July 2, from bulbar paralysis

Joseph Samuel Chagnon, M D, Willimantic Conn Victoria University, Coburg, Ont, 1883, aged 58, died at his home, August 29, from edema of the lungs

Thomas Wyre Vardon, M D, Galt, Ont, University of Victoria College, Coburg Ont, 1866, aged 74, died at his home, June 30, from heart disease

Alexander W Biddle, M D, Philadelphia, Jefferson Medical College 1879, aged 65, died at his summer home in Islesboro Me September 19

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

HYDRAS

Report of the Council on Pharmacy and Chemistry

Hydras sold by John Wyeth and Brother, Philadelphia, is one of the many proprietary, so-called "uterine tonics" It is said to contain 'Cramp Bark, Helonias Root, Hydrastis, Scutellaria, Dogwood and Aromatics," but as the amounts of the several ingredients are not given the statement regarding its composition is valueless The label declares the presence of 24 per cent alcohol

The name "Hydras," taken in connection with the statement of composition, would suggest that hydrastis (goldenseal) is an important constituent The report of the Chemical Laboratory of the American Medical Association, however, indicates that hydrastis is present in unimportant amounts

'The hydrastin content of Hydras was determined by extraction with immiscible solvents (*Pharm Review*, May, 1908 p 132) Twenty-five c c was found to yield an alkaloidal residue of 0 0160 gm The preparation contains, therefore, not more than 0 064 gm 'hydrastin' per 100 c c Inasmuch as hydrastis is required to contain about 2 5 per cent hydrastin,' hydras contains an equivalent of not more than 2 56 gm hydrastis (golden seal) in 100 c c and the stated dose of Hydras—one dessertspoonful (8 c c)—represents not more than 0 2 gm or 1/10 of the U S P average dose of hydrastis"

The label of a recently purchased bottle of Hydras bears the following recommendations for its use

> 'Indicated in treatment of Dysmenorrhea, Menorrhagia Anti Abortive, with anodyne and tonic properties"
>
> For dysmenorrhea suppressed menses, etc a dessertspoonful three times daily before or after meals '
>
> To relieve pain due to uterine disorders, a dessertspoonful every three hours or increased to a tablespoonful, at the discretion of the attending physician '

A circular wrapped around the bottle declares that Hydras is

> A valuable preparation to the physician in the treatment of dysmenorrhea colic cramps spasm palpitation incident to pregnancy and the various pains resulting from diseases of the female sexual organs"

It is further claimed that

> In the dysmenorrhea of young girls due to some mechanical difficulty, as anteflexion or of a congestive character, of suppressed menses from exposure to cold and other causes of a similar character Hydras will prove efficient and can be administered freely without danger

The value of hydrastis in the treatment of the diseases and conditions mentioned is problematical at best, and the small amount present in Hydras is wholly useless As for the other constituents cramp bark (*Viburnum opulus*), helonias (false unicorn—*Chamælirium luteum* or *Helonias dioica*) and scutellaria (skullcap—*Scutellaria lateriflora*) are drugs which are practically ignored by most writers on materia medica and therapeutics[2] Dogwood (*Cornus florida*) is a mildly astringent aromatic bitter for the use of which there is no scientific evidence

To sum up Of the five ingredients of Hydras (aside from alcohol and aromatics), one (hydrastis), which apparently gives the preparation its name is present in unimportant amounts three (cramp bark, helonias and scutellaria) are therapeutically unimportant, the fifth (dogwood) has never been shown to have any specific action on the uterus The potent constituent therefore, appears to be the alcohol

But even if every one of the several drugs said to be contained in Hydras were possessed of distinct therapeutic properties and if each were present in known and therapeutically active amounts, still the combination in fixed proportion would be irrational No one could foresee the joint effect of the five drugs in the several conditions for which the mixture is advertised Hydras is evidently meant to appeal to the thoughtless and to be used at random, witness the suggestion made in the advertising that

> Owing to its palatability, it is acceptable to patients with impaired digestion, and will serve as a stomachic tonic promoting appetite and digestion"

A useless alcoholic nostrum "administered freely" to women and girls is as dangerous as the recommendation for such administration is reprehensible

This preparation is semisecret The recommendations for its use in specified diseases which appear on the label and in the advertising accompanying the bottle are sure to lead to its ill-advised use by the public The claims made for its curative properties are exaggerated and unwarranted The name, in view of the small content of hydrastis, is misleading Finally, the combination of five drugs, even if individually they were of therapeutic value, is irrational Hydras, consequently is inadmissible to New and Nonofficial Remedies for conflict with Rules 1, 4, 6, 8 and 10, and publication of this report is authorized

[Editorial Comment—Products like "Hydras" are the bane of scientific medicine The physician who prescribes them could with just as much reason prescribe any of the various alcoholic 'patent medicines' of the "women's tonic" type In fact his patients would be running less risk of contracting the alcohol habit if he prescribed the 'patent medicines" as these nostrums usually have less alcohol than is contained in their ethical" prototypes—and alcohol is the only really important drug in practically all of them Whatever one may think of reputable pharmaceutical houses who put out products of the Hydras type, the fault really lies with the profession which tolerates such therapeutic monstrosities]

Correspondence

Fetus of Abnormal Weight

To the Editor—I was interested in the report of a child of abnormal weight, by D P Belcher, M D, in The Journal, Sept 23, 1916, p 950, especially as you have added a "comment' detailing several other such cases with credible records The following case is not for publication particularly, but simply to add to your record of actual cases of overweight, newly born infants

On Feb 16, 1914 I delivered a primiparous woman, aged 31 years, and perfectly normal physically, being a little more than the normal height and weight, of a living male child which weighed a very little over 18 pounds twenty-four hours after birth

The pelvic measurements as I found them before labor were normal, or as I thought at the time, a good generous normal

The labor was not extended beyond safe limits and she did not work harder apparently than she has since in giving birth to a normal sized child No instrumentation was at any time felt to be necessary or even expected to be so, as the descent of the head and its rotation went on in the usual way and at about the usual speed

One or two things attracted my attention during and after the labor the normal size of the placenta with the small amount of fluid in the membranous sac, the large size of the umbilical cord, the vessels being very tortuous, the marked elasticity of the maternal soft parts, the stretching of which seemed to be almost without limit, so that after labor the perineum was absolutely intact, even to the mucous membranes at the fourchette

If the data I procured at the time were correct there is no doubt that the pregnancy was at least fourteen days over the normal limit

Willis S Cooke, Otego, N Y

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1 See reports of the Council The Journal Jan 9 1915 p 165 Jan 23 1915 p 359 Nov 27 1909 p 1836 March 27, 1915 p 1093

[2] See Reports Council Pharm and Chem 1912 p 36

Danger to the Infant in Nitrous Oxid Oxygen in Labor

To the Editor —I am desirous of obtaining statistics covering the United States, so far as possible, relative to the danger to infants from the use of nitrous oxid oxygen gas in labor I should be glad to have information from any of your readers who have had such complications in their practice

R R. Ferguson, M D, Chicago
4175 Irving Park Boulevard

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed Every letter must contain the writer s name and address, but these will be omitted, on request

DAKIN S SOLUTION—USE OF MAGNESIUM CHLORID

To the Editor —1 Please give me the formula for Dakin s solution 2 What is the strength of magnesium chlorid solution used in dressing wounds?

M I Yannons, M D Electric, N C

Answer—1 In August, 1915, Dr H D Dakin, formerly director of the Herter Laboratories of New York, but now serving as bacteriologist in France, read a paper on antiseptics before the Academy of Sciences at Paris (*Presse med*, society proceedings, Aug 5, 1915 Research in Antiseptics, *Brit Med Jour*, Aug 14, 1915, p 261 The So-Called New Antiseptic, editorial, The Journal, Sept 4, 1915, p 880) He described the making of a neutral solution of hypochlorous acid—claimed to be less irritating than either a hypochlorite with a caustic cation (as Ca or Na) or an acid solution of hypochlorite—as follows

Two hundred gm of chlorinated lime are added to 10 liters of water in which 140 gm of sodium carbonate (anhydrous) have been dissolved The mixture is thoroughly shaken, and after half an hour the supernatant liquid is siphoned off of the precipitated calcium carbonate and filtered through cotton The clear liquid thus obtained is made neutral by adding boric acid solution (containing from 25 to 40 gm of boric acid) until a drop does not redden with phenolphthalein as an indicator

This was erroneously called the "Dakin-Carrell new antiseptic" Dakin later disclaimed that it was at all new (Dakin's Disclaimer of Novelty in the "New" Antiseptic, editorial, The Journal, Feb 5, 1916, p 430) It may be looked on as simply Labarraque's solution (sodium hypochlorite [NaOCl]) made neutral with boric acid The prepared solution loses its strength An important point which seemingly has been overlooked is that the strength of the bleaching powder has not been determined, as is well known, the product is exceedingly variable (A Recent Report on Foods and Drugs The Journal, Aug 26, 1916 p 695)

In the same paper Dakin discussed the action of hypochlorites believing that they reacted with proteins, forming chloramins (>NCl) Such chloramins are antiseptic He and others, therefore proposed a "new antiseptic' (Ibs, H D , Cohen, J B , and Kenyon J Studies in Antiseptics, II, on Chloramine, *Brit Med Jour*, Jan 29, 1916), sodium para-toluene-sulpho-chloramid ($CH_3C_6H_4SO_2Na$ NCl $3H_2O$), which is being investigated in Europe It is claimed to be less irritating and more stable than a hypochlorite solution, but of about the same antiseptic efficiency It has been accepted by the Council on Pharmacy and Chemistry for New and Nonofficial Remedies under the name of Chlorazene (The Journal, Sept 30, 1916, p 1021)

2 Magnesium chlorid is extremely hygroscopic, and is kept in solid form only with difficulty We are unable to find any references to its use as a surgical dressing

VACCINATION AND SMALLPOX IN JAPAN

To the Editor —I am endeavoring to secure vaccination in the public schools here and, of course am meeting with the usual amount of opposition from the 'antis' They fired their first broadside in the public press last evening in which they advanced the argument that in Japan they enforce a nation wide compulsory vaccination and have for many years but that in spite of this, they had in recent years the most serious epidemic of smallpox of any civilized country Can you give me any data on this argument?

Charles F Lynch, M D, Health Officer, Lansing Mich

Answer—The above query was referred to the Japanese Consulate in Chicago The following reply was received

To the Editor —In response to your letter of Sept 11th, I advise you that vaccination against smallpox is compulsory and enforced all over Japan The latest regulation for the enforcement of vaccination is the Law No 35, promulgated on the 14th of April, 1909 The said law was preceded by the Notifications of the Department of the Home Affairs in 1876 and the Decree No 34 of *Dajokan*" (the Cabinet) of 1885 which had the same object in view The present law was passed by the Diet and was duly approved by the Emperor, and is technically stronger and more efficient The attached statistics will show the practical results of the aforesaid ordinances and present legislation

The statement that Japan has had "in recent years the most serious epidemic of smallpox" was made, I believe, with the incidents of 1908 in mind But, according to a reliable information from a Japanese physician who is now staying in this city for medical study, most of those cases are accounted for by an undue confidence on the part of our people of their immunity from the disease caused by scarcity of the epidemic in the preceding years and their subsequent negligence of vaccination I think that this information is very well supported by the figures in the attached statistics for the following years which show the result of revived enforcement of vaccination

S Kurusu, Consul for Japan, Chicago

Smallpox in Japan 1885 1914

Year	Number of Cases of Smallpox	Number of Deceased Thereof	Population
1887	39 779	9 967	39 069 691
1888	4 052	853	39 607,234
1889	1 324	328	40 072 020
1890	296	25	40 453,461
1891	3 608	721	40 718,677
1892	33 779	849	41 089,940
1893	41,898	11,852	41,388,313
1894	12 418	3,342	41 813 215
1895	1 289	268	42 270 620
1896	10 704	3 388	42 708 264
1897	41 946	12,276	43 228 863
1898	1 752	362	43 763 855
1899	1,215	245	44 270 195
1900	111	4	44 825 591
1901	92	4	45 446 369
1902	46	7	46 041 768
1903	72	6	46 732 876
1904	1,188	237	47 219 566
1905	278	62	47 678 396
1906	496	109	48 164 761
1907	1 034	437	48 819 630
1908	18 075	5 837	49 588 804
1909	106	26	50 254 471
1910	80	13	50 984 844
1911	202	34	51,753 934
1912	14	1	
1913	108	39	
1914	485	110	

[Comment—The Japanese "argument" is a favorite one with the antivaccinationists It has been effectively answered many times but effective answers are no more convincing to antivaccinationists than they are to antivivisectionists Kitasato, Director of the Institute for Research in Infectious Diseases of Tokyo, one of the most eminent of living bacteriologists, discussed the subject of "Vaccination and Smallpox in Japan" at length in The Journal for March 25, 1911 The figures quoted by Mr Kurusu are identical with those given in Kitasato's article, although the former gives the later data In Japan as in other countries the compulsory vaccination law is rigidly enforced only in times of epidemics In the intervals it is only partially enforced The epidemics of Japan occurred in '87, '92 and '93, '97 and 1908 During each epidemic, the vaccination laws were enforced and the disease promptly disappeared as shown by the rapid fall of cases from 39 779 in 1887 to 4 052 in 1888, from 41 898 in 1893 to 1,289 in 1895, from 18,075 in 1908 to 106 in 1909 In the intervals between epidemics in Japan, as in all other countries the law was not rigidly enforced and the number of unvaccinated persons increased and formed the material on which the next epidemic developed Instead of furnishing an argument against vaccination, the health reports of Japan since 1885, the year in which the vaccination law was passed, form one of the most substantial arguments in favor of the efficacy of vaccination in the control of smallpox

The number of cases reported in 1908 is 18,075 out of a population of 49,588,804 This is one twenty-seventh of 1 per cent, or one case in 2,700 population The opponents of vaccination refer to this epidemic as "the most serious epidemic of smallpox in any civilized country" Yet in prevaccination days, smallpox caused from one tenth to one half of all the deaths

As usual the antivaccination argument is based on half knowledge and distorted facts]

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arkansas Regular Little Rock Nov 14 Sec Dr T J Stout Brinkley Homeopathic Little Rock Nov 13 Sec Dr Scott C Runnels 900 Scott St Little Rock Eclectic Little Rock Nov 14 Sec Dr C E Laws 712 Garrison Ave Fort Smith

Connecticut Homeopathic New Haven Nov 14 Sec Dr E C M Hall 82 Grand Ave New Haven *Eclectic New Haven Nov 14* Sec Dr T S Hodge 19 Main St Torrington

District of Columbia Oct 10 12 Sec Dr Edgar P Copeland The Rockingham Washington

Florida Homeopathic Jacksonville Nov 10 Sec Dr J B Griffin, St Augustine

Georgia Atlanta Oct 10 12 Sec Dr C T Nolan Marietta

Illinois Chicago Oct 10 12 Sec Dr C St Clair Drake Springfield

Iowa Des Moines Oct 17 19 Sec Dr Guilford H Sumner State House Des Moines

Kansas Topeka Oct 10 12 Sec Dr H A Dykes Lebanon

Maine Portland Nov 14 15 Sec Dr Frank W Searle 776 Congress St Portland

Massachusetts Boston Nov 14 16 Sec Dr Walter P Bowers Room 501 No 1 Beacon St Boston

Michigan Lansing Oct 10 12 Sec Dr B D Harison 504 Washington Arcade Detroit

Mississippi Jackson Oct 24 25 Sec Dr J D Gilleylen Jackson

Nevada *Carson City Nov 6* Sec Dr S L Lee Carson City

New Jersey Trenton Oct 17 18 Sec Dr Alexander MacAlister 438 E State St Trenton

New Mexico Santa Fe Oct 9 Sec Dr W E Kaser East Las Vegas

Oklahoma Oklahoma City Oct 10 11 Sec Dr Ralph V Smith, 502 Daniel Bldg Tulsa

South Carolina *Columbia Nov 14* Sec Dr A Earle Boozer 1806 Hampton St Columbia

Texas Fort Worth Nov 14 16 Sec Dr J S McCelvey Temple State Bank Bldg Temple

West Virginia *Parkersburg Nov 14 Sec Dr S L Jepson State* Health Commissioner Charleston

Medical Education in South America

Dr C M Macedo was the delegate from the Academia de Medicina of Peru to the recent Pan-American Congress at Washington, and his report is published in the *Cronica Medica* just received He says that the political features of the congress overshadowed the scientific, the delegates all feeling that they could serve their country best by taking advantage of the exceptional occasion to cement the bonds of friendship, of *confraternidad Americana*

MEDICAL SCHOOLS IN SOUTH AMERICA

"Next in interest," he continues were the discussions on medical education They threw into bright relief certain advantages of the systems followed in South America over those in vogue in the United States Medical schools in Latin America are relatively few, and the fact that they are of a high grade cannot be ascribed solely to the greater efficiency of the state in its intervention in higher education Among other reasons, the solid and central organization of the medical schools gives them a great influence and unquestioned authority in all that concerns medicine It places them in exceptional conditions for coming into direct contact with the people extending their influence into the national life by teaching hygiene etc This was one of the ideals emphasized at the Washington congress and it is already realized by the long established medical school at Lima The medical faculty at Lima is not only a teaching but also an administrative body, the center and aggregate of valuable forces It confers its diplomas in the name of the nation, and it places the graduate professional man under the protection of the central government, which is practically sovereign in all that concerns the practice of the medical sciences and pharmacy in Peru It thus enjoys already what——to judge from the ideas expressed at the Washington congress——best guarantees the legal practice of medicine in a country

ENTRANCE REQUIREMENTS

"There was practical unanimity of opinion at the congress on the necessity for a solid training in biologic sciences as an indispensable requirement for entrance to the medical school and on the necessity for addition of a fifth year to the course in those schools which require only four now The importance given to this theme in the program of the congress conformed to the laudable desire to give greater force to the campaign which the high medical body of the United States has undertaken with the purpose of exalting the prestige of the profession in that country, giving a more scientific character to medical instruction, increasing the years of study, and paying more attention to selecting high grade men than to increase the numbers of graduates

COMMERCIALISM IN MEDICAL SCHOOLS OF UNITED STATES

"Medical education was unable to hold aloof from the current of commercialism which signaled the progress of that great republic from the middle of the last century Its medical schools had to adapt themselves to the exigencies of contemporaneous life and they sacrificed their high scientific aim to utilitarian purposes, endeavoring to give an essentially practical instruction in the shortest possible time thus running the risk of fostering in students and graduates merely an interest exclusively for diagnosing sickness and treating it Such a state of education in the medical schools is far from corresponding to the progress of the medical sciences in the United States, which is due to the magnificent work at institutes devoted to medical research, and to the isolated achievements of many men of exalted scientific spirit The medical schools of Latin America have never reduced their years of study and have always made every effort to conserve the old system giving to the instruction a scientific value and to the members of the profession the self devotion of the priest They already possess a course of instruction which can be adapted to the new tendencies and to the growing impulse of medical progress in these later days

THE MEDICAL SCHOOL AT LIMA

"It is with great complacency that we can laud the wise foresight of the master minds of our medical school at Lima Inspired by the old traditions of ample clinical culture they have always insisted on two years of preparatory studies in the natural sciences and seven years of medical training during which the student is obliged to visit the hospitals daily The result of this is that the faculty of medicine of the University of Lima is in a favorable condition to conform to the new orientation of the universities, which is to transform them into centers of scientific research without detracting from their task of offering thorough instruction in the scientific truths already acquired—teaching to observe and training in experimental work educating not only clinicians but investigators as well"

INTERCHANGE OF PROFESSORS AND STUDENTS

Macedo remarks that the interchange of students and professors is scarcely possible as yet owing to the differences between the medical schools in the two Americas But when they become more of a uniform pattern the benefits from such interchange he admits would be enormous In conclusion he expatiates on the work of the institutes for scientific research in the United States their important contributions to the modern progress of surgery and hygiene and above all on the magnificent organization of its medical societies which, realizing the deficiencies in medical education have started the profession on the road of scientific progress

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Mutual Responsibility—No one class of society can dissociate itself from another class however low in the scale and say that it has no duties and no responsibilities regarding it Men cannot live isolated says Carlyle, we are all bound together for mutual good or mutual misery as living nerves in the same body No highest man can disunite himself from the lowest —Ashley, Infant Mortality

Book Notices

Diseases of the Digestive Tract and Their Treatment By A Everett Austin A M , M D Cloth Price, $5 50 Pp 552, with 85 illustrations including ten color plates St Louis C V Mosby Company 1916

This book is evidently intended mainly for the student and general practitioner It is not sufficiently complete to be of great value to the specialist It contains, however, most of the essential facts of clinical importance relating to the medical diseases of the gastro-intestinal tract The classification of the subject into the three main divisions of (1) general characteristics, (2) special gastric diseases, and (3) special intestinal diseases, with appropriate subdivisions under each heading, is practical and useful, both for teaching and for ready reference Most of the illustrations are excellent, some, however, are exaggerated, as, for instance, those of stenosis on pages 76 and 77 Some of the roentgenograms appear to be retouched This is not a bad fault in a textbook, but it should be noted in the legends The roentgenograms showing the normal stomach add to the value of the book because direct comparison with illustrations of pathologic conditions is thus made possible In connection with diagnosis, the strong emphasis on the importance of the history is noteworthy The value and limitations of gastric analysis are well described In general, the handling of the difficult subject of dietetics is satisfactory for practical purposes, but 2,025 calories, mentioned on page 226 as the total food value for a diet in malnutrition, seems rather low On the whole, the drug therapy recommended is simple and rational There is a noteworthy absence of the complex, unscientific type of prescription Repeated references are made to many of the useful, official preparations, particularly the artificial mineral waters, such as the effervescent, artificial, Carlsbad and Kissingen National Formulary formulas

Theoretically, atropin sulphate and magmatis magnesia, N F, are incompatible as prescribed on page 265 It is probable, however, that the atropin under these conditions will be absorbed The discussion of the use of alcohol on pages 205 and 206 lacks sufficient emphasis on the point that although alcohol stimulates the secretions of the gastro-intestinal tract, it, at the same time, inhibits the digestive power of the ferments In a few instances, drugs of doubtful value have been recommended Semiproprietary combinations are also occasionally mentioned where pharmacopeial preparations are available To intimate, as on page 94, that it is permissible to shake out of a bottle the required amount of two powders without weighing is dangerous advice to a student, whether the substances are markedly toxic or not While due weight is given to those conditions that require only medical therapy, the importance of surgery in the rational treatment of diseases of the gastro-intestinal tract is clearly outlined There are, however, some further minor adverse criticisms The Ehrlich reaction recommended on page 48 is of little value in the diagnosis of hepatic diseases A description of amebic dysentery and the emetin treatment is lacking It is surprising that so important a subject should be omitted There is a noteworthy lack of references to medical literature The book is in no sense a complete treatise on the subject, but it is a useful summary

Embryology Anatomy and Diseases of the Umbilicus Together with Diseases of the Urachus By Thomas Stephen Cullen Associate Professor of Gynecology in the Johns Hopkins University Illustrated by Max Brodel Cloth Price $7 50 net Pp 680 with 269 illustrations Philadelphia W B Saunders Company 1916

One would scarcely believe that a volume of 680 pages could be written exclusively on the umbilicus, but this work is a demonstration of the possibility Furthermore, everything contained therein is important and an essential part of a complete treatise on the subject The embryology and anatomy of the region are first considered, then follows an elaborate presentation of the congenital anomalies and pathologic conditions affecting the part Not only are the diseases of the umbilicus itself presented, but also all the conditions which may arise from persistent remains of fetal structures, such as the omphalomesenteric duct, the allantois, or urachus, and Meckel's diverticulum The literature of the world has been searched for illustrative cases, so that no statement is made which is not backed up by actual experience The illustrations are by Brodel, and this is a guarantee of their excellence A complete bibliography supplements each chapter The work is an excellent one and the author is to be congratulated on the very thorough and comprehensive manner in which he has presented the subject It is a credit not only to him, but also to American medicine

Miscellany

Drugless Cults in Ohio

The State Medical Board of Ohio is now investigating the more difficult cases of drugless healers who are applying for 'limited practice" certificates, under the Platt-Ellis law, on the ground that they were engaged in continuous practice for five years prior to the amendment of the law According to the *Ohio State Medical Journal* for September the board is having some amusing experiences

One of these applicants, a Mansfield healer, had applied originally for a license to practice theosophy, but as that was not recognized by the law as a system of healing, he later amended his application to include suggestive and psychotherapy On the advice of one of the board's investigators, the applicant was summoned to Columbus to explain his practice to the board He came, very fussy and very important

I understand," said President Siemon, after consulting the investigator's report, "that you have been treating infectious and contagious diseases"

Nothing lately but tuberculosis," the healer replied He then added, professionally "I've been getting some very nice results"

Dr Siemon coughed, and inquired timidly by what system the results were obtained Here is the exact answer

'By the power of thought and the grace of God"

Dr Sherman suggested that he exemplify his explanation a bit, and tell the board just how the same was applied in healing the lungs Again the answer was very specific and definite

'God put man on earth to live and do good Don't do no evil'

He refused to explain further The board members seemed at a loss as to further questioning, but Dr Upham asked

'You say that you treat tuberculosis and other diseases How do you recognize these conditions?"

The healer turned to him, with a rather fatherly and half pitying look and answered promptly

"Why, by seeing them"

Dr Siemon then ventured an inquiry as to the applicant s use of local applications in the treatment of cancer The good brother answered promptly

"Well, I don't use applications no more, much I used to, occasionally I had success by putting a little rotten apple on the sore I—"

He was promptly excused

At the same meeting of the board a woman applicant for a license to practice 'suggestive therapy and mental healing' appeared to argue her case In answer to a suggestion that she explain her system, she turned impressively to Dr Siemon and said

"Yes, doctors, I have taught others to heal the afflicted and I will now teach you"

With a smile, she then explained that it was only necessary to take three red silk threads, knotted carefully, and pass them slowly before the patient, commencing at the top of the head While doing this you repeat in German a couplet which strongly resembles, "Eenie, meenie, miney, mo" Mix in a strong portion of faith, and the trick is turned Very simple, and it works in almost any condition She said that after learning it from her mother she had personally treated tuberculosis, erysipelas, and 'lots of other bad diseases" She was excused

Medicolegal

Not Entitled to Practice Under Present Law—Reasons for Legislation

(Gay vs State (Tex) 184 S W R 200)

The Court of Criminal Appeals of Texas affirms a conviction of Defendant Gay of unlawfully practicing medicine The court says that, because of the law, there was no error in refusing to permit the defendant to testify that he graduated in the State University of Louisiana in the Medical Department, in 1868, and went to Texas and immediately thereafter engaged in the general practice of medicine in its various branches and continued therein from 1868 until the complaint was filed against him herein No such testimony by him, under the circumstances, would be any defense whatever Nor did the court err in refusing the testimony of others along the same line The only authority to practice medicine which he had registered in the district clerk's office of the county was a certified copy from the district clerk of another county, dated Dec 7, 1914, of what showed on its face was a mere temporary license issued Dec 8, 1892 by a member of the medical board under the old law as it then existed, and by its own terms was good only until the next regular meeting of the medical board of the district mentioned Under no circumstances could it be the verification license under the law as it has been since 1907 By Section 15 of the act of 1907, all the old physicians were given a year, but no longer, to get the new verification license from the board created by it, without standing any examination However, by placing Article 757 of the penal code in the revision instead of said Section 15, it was intended, and only intended, they should still not be cut off entirely, as Section 15 provided but given another opportunity to get a verification license by complying with said Article 752, and they still have that opportunity The defendant not having availed himself of the opportunity within the year after the act of 1907 went into effect, and still not doing so after the law was reenacted in the revision giving him still the opportunity, but practicing contrary to and in face of the law, must suffer the consequences of his own acts

To protect the lives, and preserve the health of the people is one of the chief objects and duties of government In order to help to do this, the legislature of the state, since the establishment of the state government, has all along, and from time to time, enacted laws to prevent the incompetent person, the faker and the fraud from deceiving the sick and afflicted under their false claim to "cure all,' and from fleecing them of their money, and at the same time fully provide for the proper license of those who prepare themselves by a thorough study and knowledge of the human body, and the diseases and ailments to which it is subject, and thus prepare themselves to properly administer to, and treat the sufferer One of the best methods heretofore devised to accomplish this and let all the people know who were competent and authorized was to require, as a prerequisite to practice, a proper authority duly recorded in the district clerk's office of the county of the residence of the practitioner, which any and every one could see for himself, and that method still prevails At an early day, a diploma from a reputable medical college, duly so recorded was required and perhaps was all that was then required It was not long till the faker and fraud took advantage of this and procured and recorded diplomas from medical colleges, which sold diplomas outright to any and every one who paid the price, and without any previous study or preparation Also it developed that many young men, for lack of means or other reasons, were unable to attend college and procure a diploma, but who studied at home and under the instruction and assistance of local physicians fully prepared themselves to practice as well as those who attended colleges and procured a diploma For all such the legislature provided medical examining boards where such young men could stand examinations and procure a license to practice without any diploma In the course of time, another class had grown up which consisted of those worthy and competent practitioners who, without license or diploma, by many years of study and practice, had demonstrated their competency to practice All three of these classes were duly provided for and protected by the various enactments of the legislature, from time to time

Damages for Negligent Treatment of Fracture Necessitating Amputation

(McAlinden vs St Maries Hospital Association (Idaho), 156 Pac R 115)

The Supreme Court of Idaho affirms a judgment in favor of the plaintiff, conditioned on his waiver to make it $8,640, instead of $12 000 The court says that the plaintiff, while in the employ of a lumber company, one Thursday morning sustained a simple comminuted fracture of both bones of the right leg at a point about 2 inches above the ankle joint The lumber company had an arrangement with the defendant association whereby the latter, in consideration of a monthly fee paid by the employees into a hospital fund treated them in cases of accident or illness The plaintiff was taken first to a hospital of the defendant at another place, and on the following Monday afternoon to the one at St Maries The negligence complained of consisted in the placing on his leg, on said Thursday of a circular plaster of Paris cast and a failure to remove or split it while he was at the first hospital, thereby causing a venous constriction of the limb, whereby it became infected with moist gangrene which necessitated amputation near the juncture of the upper and middle third of the tibia and fibula The defendant contended that the conditions which developed fully justified the use of the cast and that the failure to remove or split the same, other than as was done, resulted in no injury to the plaintiff and was not the proximate cause of the amputation of the injured limb but that this was due to dry gangrene caused by arterial injury The court thinks the evidence was sufficient to support a verdict in favor of the plaintiff If it were possible for men learned in the science of medicine and surgery to agree as to the exact result that will follow a given injury under certain treatment, or what is the proper treatment of a given injury all doubt, touching the question of whether a physician or surgeon has properly treated the patient for the injury and just what constitutes diligent and skilful or negligent and unskilful treatment, might be removed But where eminent physicians and surgeons emphatically disagree in their opinions, the most salutary method thus far provided for the administration of justice in cases of this kind is to submit these disputed questions of fact to a jury composed of twelve men of widely different walks of life and of radically different intellects and permit them to weigh and average the whole evidence and arrive at a final unanimous conclusion Whether the defendant's physician and surgeon exercised that degree of skill and learning possessed by the average member of the medical and surgical professions in good standing in the community and used that reasonable care and diligence according to his best judgment in treating the plaintiff's injured limb that the average member of the profession would have used, were questions of fact exclusively for the jury to determine This rule is not changed by reason of the fact that men learned in the science of medicine and surgery have given conflicting testimony touching the required and approved treatment of an injury While it may be true in this case that the jury in reaching its verdict was not in a position to say beyond the possibility of a doubt that any one single fact in evidence or the absence of any one condition established conclusively the negligence of the defendant's physician and surgeon in placing the cast on the injured limb at the time and in the manner in which it was done and in his failure to split the cast and thus permit free and uninterrupted venous circulation, yet if from all the testimony and circumstances of the case, there was evidence sufficient to establish a prima facie case the conclusion reached by the jury based on this evidence will not be disturbed on appeal The court, however, thinks that $8 640 should compensate the plaintiff for the pain and suffering, as well as the loss of the injured limb, so far as such loss could be properly compensated in dollars and cents An examination of a number of authorities from other states showed that courts have invariably, for similar injuries, held verdicts in excess of the amount fixed by this court to be excessive

Lawful Prescribing of Morphin

(Fyke vs State (Tex) 184 S W R 197)

The Court of Criminal Appeals of Texas reverses a judgment of conviction of defendant Fyke, a physician, who was charged with having unlawfully prescribed morphin for the use of an alleged habitual user of morphin The latter testified that she had become bedridden, and when she first called the defendant in, he had to treat her for peritonitis and a swollen condition of the groins and inflammation of the bowels It appeared that he administered the morphin for two purposes first, to relieve her of her present suffering, and, second, to cure her of her habit, succeeding in both The court holds that if the defendant gave the medicine to relieve the woman of pain at the time he was called in this should not have been made the basis of a conviction, that if he, as a lawful practicing physician, administered morphin to his patient, who was suffering with peritonitis and abscesses in the groin, and it was known to him, and he did it for that purpose, he would not be violating the Texas statute Moreover, the jury should have been instructed that, if they had any reasonable doubt as to whether or not he prescribed the drug in good faith, believing it to be necessary in the treatment of such diseases it would be their duty to acquit If they had such reasonable doubt, he was entitled to the benefit of the doubt, although the jury should find and believe that the patient was a habitual user of the drug Nor would the defendant be guilty of a violation of the statute if, in treating or curing her of the habit itself, he administered the drug in such way as it assisted in curing the habit Excluded testimony wherein it was offered to be shown by the defendant that the size of the dose of morphin gradually grew less, until it altogether ceased, under his treatment, should have gone before the jury It bore directly on the case, and was pertinent to show his good faith in using the morphin to cure the habit of using that drug It will be observed, from a casual reading of Article 748 of the penal code, that its denunciations are leveled at practitioners, or prohibits practitioners from administering morphin to habitual users of that drug or any of the drugs mentioned It is also discernible on the face of the statute that it was not intended to prevent practitioners from administering this drug in case of sickness, or to alleviate pain, or to cure the habit of using morphin In other words, its provisions seem to be directed against the named physicians or practitioners with a view of prohibiting them from prescribing or administering these mentioned drugs to habitual users in order to continue their use It does not interdict the administration of these drugs when it is necessary to alleviate pain or to cure the habit Therefore, if the practitioner administers it to alleviate such pain, or uses it in good faith where the party is sick, or as a means of finally curing the habit, it is not within the statutory denunciation

Society Proceedings

COMING MEETINGS

Am Assn for the Study and Prev of Inf Mort Milwaukee, Oct 19 21
American Association of Railway Surgeons Chicago Oct 17 19
American Public Health Association Cincinnati Oct 24 27
Clinical Congress of Surgeons Philadelphia Oct 23 28
Delaware State Medical Society Milford Oct 9 10
Kentucky State Medical Association Hopkinsville Oct 24 27
Minnesota State Medical Association, Minneapolis Oct 11 13
Mississippi Valley Medical Association, Indianapolis Oct 10 12
Nevada State Medical Association Reno Oct 10 12
New Mexico Medical Society Albuquerque Oct 11 13
Southern Medical Association Atlanta Nov 13 16
Vermont State Medical Society, St Johnsbury Oct 12 13
Virginia State Medical Society Norfolk Oct 24 27

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Obstetrics and Diseases of Women and Children, York, Pa

September LXXIV No 3

1 Adenocarcinoma of Corpus Uteri Nearly Complete Removal by Curet 2 Ectopic Chorio Epithelioma of Pelvis R T Frank, New York —p 369
2 Case of General Edema of Fetus H C Williamson, New York —p 376
3 Case of Carcinoma of Cecum in Girl Twenty Three Years of Age J R Eastman, Indianapolis —p 380
4 Congenital and Acquired Retropositions of Uterus, Their Differentiation and Relative Significance A Sturmdorf, New York —p 386
5 Case of Syncytioma Malignum K Adachi —p 397
6 *Protective Action of High Carbohydrate Diet and Oxygen on Liver Cells in Experimental Chloroform Poisoning, with Its Possible Application in Pre Eclamptic Toxemia R T Lavake, Minneapolis —p 401
7 *Rupture of Scar of Previous Cesarean Section P Findley, Omaha —p 411
8 *Results from Pituitary Extract in Obstetrics Report of Case of Rupture of Uterus Following Its Use L G McNeile, Los Angeles —p 432
9 *Relationship Between Pelvic Disease and Manic Depressive Insanity G Gibson, Brooklyn —p 439
10 Sarcomatous Change in Uterine Fibroids W J Maroney, New York —p 445
11 Etiology of Sterility in Women G B Miller, Washington, D C —p 450
12 Lessened Fertility of Women, Especially American Women I S Stone Washington D C —p 454
13 Indications for and Advisability of Artificial Sterilization R Y Sullivan Washington, D C —p 458
14 Tuberculous Peritonitis C R Hyde, Brooklyn —p 466
15 Endocrine Glands in Their Relation to Female Generative Organs W Timme, New York —p 474
16 Syphilis of Uterus D W Prentiss, Washington, D C —p 480
17 Congenital Occlusion of Bile Ducts J Foote and R Hamilton, Washington, D C —p 521

6 **Action of High Carbohydrate Diet and Oxygen**—Lavake states that Opie and Alford are justified in believing that a high carbohydrate diet might be of marked value in preeclamptic toxemia and his own experiments point to the fact that the administration of oxygen, as advocated empirically by Stroganoff, or treatment in the open air may have a rational pathologic basis for support

7 **Rupture of Cesarean Scar**—Sixty-three published cases are analyzed by Findley He is convinced that a perfectly healed cesarean wound may be relied on to resist the forces of labor, but in view of the fact that the integrity of the wound is an unknown factor in all cases, he says, we are constrained to exercise the utmost caution in the conduct of every case in pregnancy and labor following cesarean section Failure to secure perfect healing is accounted for by departure from the principles of suture proposed by Sänger and by septic infection of the uterine wound The possible existence of latent gonorrheal infection may defeat the most painstaking efforts to secure perfect wound healing When cesarean section has been followed by a fever course the uterine wound should be regarded as insecure in event of a subsequent pregnancy, and should call for a repeated cesarean section at the onset of labor Sterilization and hysterectomy should replace conservative cesarean section when infection is known to exist The alternative invites faulty wound healing, if not more disastrous results Transverse fundal, extraperitoneal and cervical incisions have not lessened the liability of rupture in subsequent labors, but, on the contrary, have probably increased the hazard The possibility of rupture of the scar following cesarean section does not justify sterilization, but rather calls for the exercise of masterly control in event of a subsequent pregnancy All such cases should be hospital cases and labor should be anticipated by timely repetition of cesarean section at the onset of labor if the uterine wound is known to be defective or if some cause for obstruction to the delivery of the child through the natural passage exists Version, high forceps, uterine tampons, hydrostatic bags, and pituitary extract should never be employed in the presence of a cesarean scar

8 **Results from Pituitary Extract in Obstetrics**—In the case reported by McNeile the conditions present before the drug was given were a well engaged head, complete dilatation, ruptured membranes, and a decrease in the strength of the uterine contractions The fault to be found with its use in this case lay in the nonrecognition of an obliquely contracted pelvis

9 **Pelvic Disease and Manic Depressive Insanity**—Gibson states that no mental improvement may be expected to follow an operation performed on the pelvic organs of a woman who is suffering from a psychosis which is characterized by dementia An operation for the correction of lesions in the pelvis is justifiable in a woman who has manic depressive insanity and some improvement may be hoped for if the operation is performed in the first or second attack The pelvic pathology is not the cause of the psychosis but may act as the exciting cause of an attack in a woman of neuropathic stock The effect of the operation may be an indirect one by improving the general physical condition of the patient

Archives of Pediatrics, New York

September XXXIII No 9

18 Meningococcus Meningitis with Unusual Hemorrhagic Manifestations and Demonstration of Diplococcus in Skin C T Sharpe New York—p 641
19 Autoserum Treatment of Chorea A L Goodman New York—p 649
20 *Early Morning Toxic Vomiting in Children T S Southworth New York—p 654
21 *Twelve Cases of Spasmophilia Etiology and Treatment F P Webster Portland Me—p 658
22 Case of Hirschsprung s Disease with Bibliography to January 1 1916 R. Cadwallader San Francisco—p 665
23 *Studies on Parenteral Infections J R Gerstley Chicago—p 671
24 *Unusual Case of Hydrocephalus R. D Moffett New York—p 679

20 Abstracted in The Journal July 8, p 146

21 **Spasmophilia, Etiology and Treatment**—Webster is of the opinion that spasmophilia is due to overfeeding, especially of carbohydrate food, more especially in fermentable form and that dietetic treatment similar to that of Grulee is most effectual

23 **Parenteral Infections**—From the study of 200 cases of parenteral infection Gerstley concludes that parenteral infections in many cases are associated with a mild or moderate diarrhea If the child is allowed to drink as he sees fit, this diarrhea rarely develops into a severer disturbance It almost never does in children on a mixed diet The very few cases of severer disturbances which developed followed no rules that Gerstley could discover They did not depend on (*a*) anatomic situation of the infection, as bronchitis otitis or cystitis, (*b*) degree length or severity of the infection, (*c*) on constitutional inferiority of the child or on (*d*) the outcome of the disease Gerstley believes that in many cases the initial diarrhea and vomiting occurring before admission to the hospital are due to the invariable dose of castor oil and some clinical charts show diarrheas associated with coughs occurring in the hospital conditions which seem also to be related to the medication in some way, as for example aromatic spirits of ammonia In some cases the cough disappears as the nutrition improves

24 **Unusual Case of Hydrocephalus**—This case of hydrocephalus began at birth and Moffett says in all probability was not so much due to the fact that the spinal fluid was secreted in too large a quantity, for if this were the case the head would have filled more rapidly after puncture than it did but it was due to a lessened absorbing power of the membrane covering the brain and of the spinal cord Only 15 c c of spinal fluid was obtained by lumbar puncture, which would indicate that there was undoubtedly some obstruction in the aqueduct of Sylvius The exact nature of this obstruction could not be determined as no postmortem examination was available

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25 *Rat and Infantile Paralysis M W Richardson Boston—p 397
26 Some Medical Aspects of Workmen s Compensation Act I D Donoghue Boston—p 400
27 Major Divisions of Mental Hygiene—Public Social Individual E. E. Southard Boston.—p 404
28 What Recent Investigations Have Shown to Be Relation Between Mental Defect and Crime A W Stearns Boston—p 406
29 Epilepsy E Flood, Boston—p 408
30 Idiosyncrasy to Cow s Milk Its Relation to Anaphylaxis F B Talbot Boston—p 409
31 Treatment of Tuberculosis in Infancy W W Howell Boston—p 411

25 **Rat and Infantile Paralysis**—The following facts supporting the theory that the disease is transferred by rodents, insects, or both are offered by Richardson (1) Summer incidence of the disease, (2) the resemblance of the disease in its epidemiology to malaria and yellow fever has been noted more than once, (3) the positive results of Rosenau and also of Anderson and Frost together with the successful experiment of Flexner with the bedbug That the bedbug might be the intermediate link in the chain seemed to Richardson highly improbable in view of the fact that infantile paralysis attacks with almost equal frequency all strata of society The possible relation of the rat to infantile paralysis was first brought to Richardson's attention in 1910 through an observation made by Dr Charles E Simpson state inspector of health In investigating an epidemic of the disease Dr Simpson observed the fact that many rats, whose homes had been in a town dump were compelled, because of a fire in that dump, to seek refuge in the neighboring houses In these houses infantile paralysis seemed to be unduly prevalent Another experience pointing in the same direction occurred in a small country neighborhood occupied as a summer colony by a number of city residents The only immediate unusual factor to be assigned for this epidemic was the removal, from one situation to another, of an old barn The barn cellar was dug up and improved, and, during this operation the affected children played in the excavation The inference is, of course, that many old rat holes were destroyed and that the accumulation of years in the way of rat disease and fleas may have been distributed broadcast to the outside world A third observation, but a rare one, was made in a Massachusetts city where, in an infected district, many rats were said to have been found dead In another city a muddy river and its tributaries honeycombed to a greater or less extent the municipality The location of the cases of infantile paralysis seemed to have a remarkable relation to this stream and its branches Indeed, the whole Massachusetts experience seems to indicate that the disease has been endemic along its rivers, most of which are polluted by sewage to a greater or less extent The possible association of the water rat was thus indicated

The great increase in poliomyelitis during the last twenty-five years has been explained as due to the great increase in facility of transportation all over the world, so that infinitely increased human contact has become possible The same argument would apply however to the transfer of infected rats from one locality to another Indeed such transfer in freight cars and ships carrying grain cattle pigs etc, must be common The relation to the railroads of cases of infantile paralysis has been noticed by a number of observers

Nothing could be more probable than that children living near railroads should play in rat infected freight cars Infected rats furthermore, if dropped from freight cars, would necessarily seek their food in the immediate neighborhood In the transfer of the infection from the rat to man the agency of the flea is assumed although the possible contamination of food by rodent excretions might well be considered The insect transfer might be simply mechanical or it might require a preliminary cycle of development of the virus in the flea Furthermore, the possible role of cats dogs and other animals or even human beings as carriers of infected fleas would be apparent Moreover in grossly unsanitary surroundings the fleas might carry infection from one child to another directly These theories, Richardson says explain better than any other hypothesis submitted the epidemiologic facts as observed in infantile paralysis

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70 **Clinical Value of Defense and Muscle Reflexes**—Exaggerated muscle reflexes Weisenburg says are constantly present in pyramidal lesions and are of equal importance with increased tonicity and increased tendon reflexes In spinal localization they are of value for in destructive lesions they are either absent or diminished in the peripheral area corresponding to the lesion In such cases the muscle jerks may be increased just above the lesion but are always exaggerated in the parts of the body below the lower limit of the lesion, even though the skin and tendon reflexes are diminished or lost In incomplete lesions of the spinal cord the muscle reflexes are exaggerated up to the upper limit of the lesion In a gradually extending upward paralysis such as is produced by a pressure myelitis the exaggeration of the muscle reflexes keeps pace with the increase of the paralysis and is an indication of an extension of the lesion The most important conclusion that can be drawn according to the author is that the exaggeration and more especially the absence of a muscle reflex is an indication of the state of the reflex arc in the spinal segment corresponding to that particular muscle

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71 Family Spastic Paralysis J H W Rhein Philadelphia—p 224

68 **Acroparesthesia**—Referring to the use of quinin in this affection, Putnam says, that there is no question that this drug, when given in doses of 10 or 15 grains, or even more, is exceedingly beneficial when the numbness is present in a paroxysmal form But he does not believe that one does wisely to continue it for very long, or that one can use it as a final remedy The benefit to be derived from it is rather of a similar sort to that obtained through the same means in the typical neuralgia of the superorbital branch of the fifth nerve While the results are often very striking, the final effect is rather to postpone an attack than really to cure it In acroparesthesia quinin might help to break up a morbid habit, and Putnam has used it only for that purpose, giving a large dose on three successive nights and repeating this treatment once a week

70 **Clinical Value of Defense and Muscle Reflexes**—Exaggerated muscle reflexes Weisenburg says are constantly present in pyramidal lesions and are of equal importance with increased tonicity and increased tendon reflexes In spinal localization they are of value for in destructive lesions they are either absent or diminished in the peripheral area corresponding to the lesion In such cases the muscle jerks may be increased just above the lesion but are always exaggerated in the parts of the body below the lower limit of the lesion even though the skin and tendon reflexes are diminished or lost In incomplete lesions of the spinal cord the muscle reflexes are exaggerated up to the upper limit of the lesion In a gradually extending upward paralysis such as is produced by a pressure myelitis the exaggeration of the muscle reflexes keeps pace with the increase of the paralysis and is an indication of an extension of the lesion The most important conclusion that can be drawn according to the author is that the exaggeration and more especially the absence of a muscle reflex is an indication of the state of the reflex arc in the spinal segment corresponding to that particular muscle

Journal-Lancet, Minneapolis

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72 Acute Mastoiditis A E Johnson Watertown S D—p 527
73 Suppurative Mastoiditis—Surgical Emergency I J Putnam Sioux Falls S D—p 531
74 Transplantation of Bone in Fractures M S Henderson, Rochester Minn—p 540
75 Local Anesthesia L E Daugherty St Paul—p 544

Kansas Medical Society Journal, Topeka

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76 Indications and Modern Methods for Blood Transfusions E S Edgerton Wichita—p 251
77 Fractures R C Lowman Kansas City—p 255
78 Team Work in Medicine J T Axtell Newton—p 258
79 Some Obstetric Emergencies F T Van Eman Kansas City, Mo—p 260
80 Early Diagnosis and Treatment of Syphilis W K Trimble Kansas City Mo—p 266

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81 Some Practical Notes on Blood Pressure G V N Dearborn Cambridge Mass—p 478
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86 Speech Its Culture and Refinement What Is Done for It in Holland N J P Van Baggen Hague Holland—p 502
87 Medical Education in Chemistry F S Hammett Los Angeles—p 503

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88 Present Status of Chronic Multiple Arthritis with Special Consideration of Infection as Etiologic Factor G R Elliott New York—p 529
89 Malignant Transformation of Benign Intestinal Growths F C Yeomans New York—p 537
90 Fracture and Dislocation of Proximal End of First Metacarpal Bone and Fracture of Trapezium C W Perkins New York—p 539
91 Report of Seventy Seven Cases of Acute Poliomyelitis Treated in New York Throat Nose and Lung Hospital by Intraspinal Injections of Epinephrin Chlorid P M Lewis New York—p 540
92 Reflections on Poliomyelitis D W Wynkoop Babylon—p 545
93 Clinical Delimitation of Hysteria M Solomon Chicago—p 546
94 Fatality Following Acute Otitis I W Voorhees New York—p 548

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95 Epilepsy C A L Reed Cincinnati—p 529
96 Reed s Bacillus of Epilepsy A J Hinkelmann Galesburg Ill—p 531
97 Pathogenesis and Treatment of Epilepsy H A Cotton E P Corson White Philadelphia and W W Stevenson Trenton N J—p 532
98 Toxic Manifestations of Epilepsy and Their Rational Treatment R H Spangler Philadelphia—p 534
99 Pelvic Infection A J Walscheid, New York—p 540
100 Hemiplegia W Martin Atlantic City N J—p 544
101 Secondary Syphilitic Lesions of Tongue C Saison, Paris—p 547
102 Medicine and Surgery in Modern Warfare B Jablons San Francisco—p 549
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104 Invariable Blood Stain B G R Williams Paris Ill—p 555

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106 Hospital Treatment of Simple Chorea P Bailey New York—p 580
107 Infective Pulmonary Endarteritis Occurring with Patent Ductus Arteriosus M Manges New York—p 581
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111 Congenital Syphilis W J Heimann, New York—p 592
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113 Bothriocephalus Latus Infestation A I Rubenstone Philadelphia—p 599
114 Cysto Urethroscope for Diagnosis and Therapeutics C Morales Macedo New York—p 600

New York State Journal of Medicine

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116 Genital Reflexes and Their Role in Production of Symptoms Arising in Pelvis R R Smith Grand Rapids Mich—p 429
117 Functional and Organic Differentia in Nervous Diseases as Shown by Cases T A Williams Washington D C—p 435
118 *Acute Epidemic Poliomyelitis—Contact Infection P A E Sheppard Boston—p 442
119 Recent Ideas Concerning Diagnosis and Vaccine Therapy of Iridocyclitis Report of Case L M Francis Buffalo—p 447

120 Eye in General Practice H W Cowper Buffalo —p 454
121 *Endoscopy of Esophagus and Upper Air Passages in Children C J Imperatori, New York —p 456
122 Responsibility of Physician in Control of Cancer A J Brown, New York —p *462*
123 Bird Shot Found in Appendix J N Vander Veer, Albany —p 465
124 Fractures C O Barney, Syracuse —p 466
125 Pin Worms as Cause of Appendicitis A W Armstrong, Canandaigua —p 470

115 Abstracted in The Journal, June 24, p 2124

118 **Acute Epidemic Poliomyelitis** —Sheppard cites a considerable number of cases divided into eight groups in which the grouping around some common source of infection is of such a character as to strikingly point to acute epidemic poliomyelitis being a contact infection which would establish the contagiousness of the disease Sheppard urges that acute epidemic poliomyelitis be handled by the health authorities as a contact infection

121 **Endoscopy of Esophagus** —Imperatori urges that endoscopy of the esophagus and upper air passages in children and also in adults, should be made use of more than it is, as a means of precise diagnosis

Northwest Medicine, Seattle, Wash

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126 Some Needs of Profession J R Brown, Tacoma —p 251
127 Suppurations of Lung and Pleura with Their Surgical Indications S E Lambert Spokane —p 253
128 Chronic Myocarditis with Embolic Manifestations and Fever Simulating Clinical Course of Bacterial Endocarditis Report of Case I C Brill San Francisco —p 257
129 Treatment of Certain Forms of Sterility in Female A C Martin, Seattle —p 260
130 Infant for Adoption J B Manning Seattle —p *264*
131 Pyloric Stenosis in Infancy P D McCornack Spokane —p *266*
132 Toxemia of Pregnancy Some Thoughts Suggested by Three Recent Cases F T Hyde, Port Angeles —p 268

Pennsylvania Medical Journal, Athens

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133 Tuberculosis Some Words to General Practitioner W Brinton Philadelphia —p 885
134 Concentrated Sunlight in Treatment of Tuberculous Lesions F A Johnston Socorro N M —p 891
135 Sectional Method of Teaching and Studying Macroscopic Anatomy J P Schaeffer Philadelphia —p 894
136 Dermatitis Caused by Cosmetics and Wearing Apparel Particularly Those Containing Paraphenylendiamin F C Knowles Philadelphia —p 897
137 Plea for More Necropsies S M Martsolf Westover —p 900
138 Local Anesthesia in Minor Surgery *C W McElhaney Greenville —p 904*
139 Radium in French Military Surgery W H Cameron Pittsburgh —p 906
140 Pain as Indication for Surgical Interference R J Behan Pittsburgh —p *908*

Southwest Journal of Medicine and Surgery, El Reno, Okla

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141 Differential Diagnosis Between Gastric Ulcer Gallstones and Diffuse Gastritis W T Grove, Eureka Kan —p 253
142 Pelvic Mechanotherapy F A Harper, Pittsburg Kan —p *267*
143 Clinical and Pathologic Aspects of Primary Sarcoma of Large Intestine C Potter St Joseph Mo —p *276*

Texas State Journal of Medicine, Fort Worth

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144 Some Phases of Typhoid M L Graves Galveston —p 209
145 Isolation of Bacillus Typhosus from Bile in Typhoid B Reading Galveston —p 211
146 Ovarian Transplantation Report of Cases W D Phillips New Orleans —p 213
147 Disordered Menstruation as Symptom of Disease H L D Kirkham Houston —p 218
148 Postoperative Insanity W L Secor, Kerrville on the Gaudalupe —p 220
149 Diagnosis of Pernicious Anemia G C Kindley Dallas —p 222
150 Sympathetic Ophthalmia J H Burleson, San Antonio —p 225
151 *Symptoms* and Treatment of Deflected Nasal Septum H L Warwick Fort Worth —p 226
152 Temporal and Subconjunctival Medication in Certain Eye Conditions *R B Sellers, Fort Worth —p 229*
153 Foreign Bodies in Trachea Bronchi and Esophagus Case Reports J L Burgess Waco —p 231
154 Case of Typhus H L McNeil Galveston —p 234

Wisconsin Medical Journal, Milwaukee

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155 Some of More Common Diseases of Skin O H Foerster Milwaukee —p 105
156 *Gastric and Duodenal Ulcer in Newborn T W Nuzum, Janesville —p 111
157 Nurse Midwife F J Taussig, St Louis —p 113
158 Limitations of Surgery in Treatment of Pelvic Inflammations P Findley, Omaha —p *116*
159 *Eighty Two Cultures Taken from Physicians Clinical Thermometers W R Ramsey and H M Schoberg St Paul —p 118

156 **Gastric and Duodenal Ulcer in Newborn** —Nuzum cites two cases of such ulcers occurring in infants A strong healthy girl, 24 hours old, suddenly vomited some 2 or more ounces of blood after which she was very pale and weak and showed very marked symptoms of loss of blood This occurred on two other occasions and she lay at the point of death for sometime She finally rallied, made a slow recovery and up to the time she was 10 years old was a healthy fine girl Nuzum is convinced that this was a case of gastric ulcer, which was present before birth and which started to bleed on account of the distention of the stomach by the mother's milk and consequent peristalsis, or by both A fine baby girl cried lustily following a natural delivery, nursed well, and seemed well in every way until about 14 hours old when the nurse noticed a spot of blood on the diaper Nuzum made a diagnosis of hemorrhage from a duodenal ulcer and instituted active treatment for the same, but to no avail She continued to pass clotted blood during the night, went into collapse and died when 24 hours old A postmortem was permitted There was a firm band of organic adhesions about one-half inch wide extending from the ulcer site on the duodenum to the gallbladder, also some friable adhesions and a plastic exudate A small quantity of blood had oozed through the perforation into the peritoneal cavity The mucosa around the tiny ulcer was smooth and soft, not noticeably different from that in the normal parts

159 **Cultures Taken from Clinical Thermometers** —Total cultures taken by Ramsey and Schoberg were eighty-two Of this number, thirty-three were sterile, forty-nine contained organisms of various kinds Streptococci occurred in thirteen cultures One thermometer which gave a pure culture of streptococci had been used in the mouth of a patient with facial erysipelas a few hours before and had been washed in water, and dipped in alcohol before returning to the case Five others, from thermometers used in scarlet fever patients contained streptococci in large numbers *Staphylococcus albus* and citrus were present in thirteen cultures Pneumococcus occurred in one culture The remainder had various organisms, large spore forming bacilli, hay bacilli, mould fungus, etc The authors emphasize that careless washing will not suffice but that thorough washing with running water and then alcohol will render them clean A thermometer case containing some solution such as alcohol or formaldehyd solution, in which the thermometer could be carried, would lessen greatly the possibilities of infection, as several thermometers were examined which were carried in this way and all were sterile

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FOREIGN

Titles marked with an asterisk (*) are abstracted below Single case reports and trials of new drugs are usually omitted

British Medical Journal, London

September 2 II No 2905

1 Distribution of Typhoid and Paratyphoid Infections Among Enteric Fevers at Mudros October December, 1915 C J Martin and W G D Upjohn —p 313
2 *Brilliant Green and Telluric Acid in Isolation of Typhoid Paratyphoid Bacilli A Leitch —p *317*
3 *Local Treatment of Burns on Naval Hospital Ship R J Willan —p 318
4 Extension Treatment of Gunshot Fractures E W H Groves —p 320
5 *Mechanism of Saline Dressings K Taylor —p 321
6 Recent Epidemic Outbreaks of Acute Poliomyelitis A G Robb —p 324
7 Three Cases of *Bubonic Plague Arising in* England A R Short —p 327

2 **Isolation of Typhoid-Paratyphoid Bacilli** —For the isolation of typhoid-paratyphoid organisms from urine Leitch tried a slight *modification of the* Browning-Mackie method in 1,100 specimens Equal quantities of urine and brilliant green peptone water (the dye being in a concentration of 1

in 100,000 in the latter) were mixed and incubated for twenty-four hours, and a loopful from each was spread on MacConkey plates In only one case was an organism of the group isolated—a paratyphoid A In almost all other cases the plates were sterile Leitch regards the method of Browning Gilmour and Mackie as a useful one in detecting a number of carriers of typhoid paratyphoid that are liable to be overlooked by the ordinary procedure Both methods should be done together as a check on each other Owing to the saving of time if one method alone has to be used Leitch would use the brilliant green

3 Local Treatment of Burns—The treatment employed by Willan was as follows The blisters were punctured and the contents drained under strict aseptic precautions, the surface being first sponged with phenol solution 1 in 20 If it was a recent burn he applied the service picric acid dressing as the first dressing Early sepsis in burns has an unmistakable odor and the sense of smell can detect it early If there was no smell the first dressing was left on for two days, when it was removed in order to puncture any further blisters which might have formed An ointment was applied, made of equal parts of boric ointment and petrolatum This was plentifully spread on strips of white "surgeons' lint" and was changed once daily If the dressing had the septic smell the infected part was fomented with boric fomentations every four hours The fomentation was four ply and the covering jaconet projected for one-half inch beyond the margins of the fotus in order to keep in the moisture When the area cleared up—that is, when all sloughs, etc, had separated and a clean surface was left—the above mentioned ointment was similarly applied once a day, according to the amount of pus which had been secreted from the raw surface

If the burn was aseptic the loose skin of the blisters was not removed, but was left to act as a protection to the exposed deeper and painful layer of the skin If the burn was septic all loose skin was cut away The dressing next to the skin was covered by wool containing a small amount of mercury perchlorid The whole dressing was fixed by a bandage loosely applied Face masks were not used except when a fomentation was required With face burns the nose, cheeks and lips were frequently smeared with the ointment, which was gently massaged in with the convex surface of a teaspoon Out of twenty-eight cases, fifteen were aseptic, and all these recovered The remaining thirteen cases were septic to a greater or lesser degree, and five of them succumbed, but one of these had other serious injuries Four of the cases were virulently septic, and two fatal cases developed erysipelas

5 Mechanism of Saline Dressings—What clinical evidence asks Taylor is there of the success of the treatment with hypertonic salt dressings? Aside from the claims of its author, there have been scattered reports in its favor appearing in various medical journals There is also a strong minority which is disappointed in the treatment It is claimed that the infection is not diminished and that the wound is left in poorer condition by its use than would have been the case if it had been left alone Attempts are made to reinforce the weak antiseptic action of the high sodium chlorid content by the addition of a more active germicide This is merely additional evidence that it has proved unsatisfactory Taylor has seen it used rather extensively, and has not been convinced that it produced the results claimed for it The saprophytic bacterial flora persisted quite as long as with the ordinary methods of antiseptic treatment and the separation of sloughs did not appear to be appreciably hastened He has in addition felt that edema of the tissues around the wound occurred more frequently after the use of hypertonic saline than with other dressing solutions possibly as the result of an increased deposit of salt Furthermore, the recuperative reaction in the wound appeared to be retarded

Indian Medical Gazette, Calcutta

August LI No 8

8 Likewise and Contrary Wise R Bryson—p 281
9 Diarrhea and Continuous Fever Due to Oysters W D Keyworth—p 286
10 Treatment of Trachoma by Excision of Tarsus and Tarsal Conjunctiva of Upper Lid W E S Moncrief—p 294

Lancet, London

September 9 II No 4854

11 Analysis of Living Matter Through Its Reactions to Poisons A R Cushny—p 459
12 Study of Shell Shock C S Myers—p 461
13 *Effect of Trench Warfare on Renal Function J W McLeod and P Ameuille—p 468
14 Diagnostic Value of Tubercle of Choroid S Stephenson—p 472
15 Trench Pyrexias Their Prevention and Treatment B Hughes—p 474
16 *Dressing of Septic Gunshot Wounds W B Davy—p 475
17 Case of Persistent Fever G L Turnbull—p 476
18 Bayonet Wounds of Chest S D Rhind—p 477
19 Shiah Pilgrimage and Sanitary Defences of Mesopotamia and Turco Persian Frontier F G Clemow—p 488

13 Effect of Trench Warfare on Penal Function—From the results obtained from the study of a considerable number of cases the authors are of the opinion that exposure alone has probably nothing to do with the causation of a number of the cases of nephritis observed in France especially the milder ones and that if it has a part in the etiology of the more severe cases it will be similar to that exhibited in many infectious diseases namely that of setting up a defective circulation in an organ so as to render it less capable of resisting bacterial invasion Transitory albuminuria is very common among all troops, especially those making considerable physical efforts, and the majority of these albuminurias can be classed with the so called 'fatigue' albuminuria There exist, especially among the British troops, an excess of cases of symptomless albuminuria apart from those just mentioned which cannot all be classified as chronic nephritis and which probably correspond to the surprisingly mild type of nephritis which has been so often observed during this campaign among the British troops Diet appears to be the most likely explanation of this excess of transitory albuminuria and mild nephritis and may also contribute toward the development of the more severe cases In support of this last conclusion it may be pointed out that the authors' experiments have demonstrated that the average soldier is consuming an amount of protein food in excess of his requirements and is therefore, throwing an undue strain on his excretory organs, that the relative rarity of acute nephritis among younger officers is generally admitted, and that the unusually numerous cases of gingivitis which come under observation probably indicate that the men are suffering to some extent from the restriction of fresh vegetable food, which is usual, and to some extent inevitable for troops in the front line and not uncommon farther back

16 Dressing of Septic Gunshot Wounds—Davy is impressed with the fact that from a therapeutic point of view the dressing, or rather the redressing, of a septic wound is as unnecessary as, and much more harmful than the redressing of a wound that is expected to heal by first intention A redressing is of diagnostic value only, and it is the last diagnostic test that should be applied A redressing should be looked on as an operation only to be undertaken after careful thought, and an unnecessary dressing should be regarded with as much regret as an unnecessary operation Most redressings are entirely unnecessary, and it is the better recognition of this that is Davy s plea

Medical Journal of Australia, Sydney

August 12 II No 7

20 Fractures of Lower Extremity R H Russell—p 107
21 Intensive Specific Treatment of Epidemic Cerebrospinal Meningitis D A Welsh and W S Brown—p 113
22 Operation Specimen Containing Inflamed Appendix, Pyosalpinx Hydrosalpinx Fibrotic Uterus and Fibroid Polyp Technic Employed R Worrall—p 117

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23 Arsenobenzol Substitutes for German Salvarsan E H Molesworth—p 129
24 Danysz 102 (Luargol) in Treatment of Malignant or Acute Syphilis Dalimier and Levy Franckel—p 130
25 Pyorrhea Alveolaris A J Wright—p 131
26 Roentgenology and Radium Therapy Abroad H Harris—p 133

Practitioner, London

September XCVII No 3

27 *Abdominal Wounds in War C Wallace—p 201
28 Recent Work in Orthopedics. E R Carling—p 232
29 Recent Literature on Typhus C B Ker—p 238

30 Reaction of Child to Faulty Environment H C Cameron —p 246
31 *Gonorrhea Treated by Electrolysis Results in One Hundred Cases C Russ —p 256
32 Drug Progress D M Macdonald —p 260
33 Passive Ergotherapy in Obesity J S K Smith —p 264
34 *Clinical Significance of Sinus Arrhythmia L T Thorne —p 274
35 Prognosis and Prophylaxis in Eclampsia G I Strachan —p 279
36 Bearer Work at Front H W Spaight —p 288

27 **Abdominal Wounds in War**—The advisability of early operation, in the great majority of gunshot wounds of the abdomen, Wallace says, may now be said to be established on a firm basis The question is now What cases are best left alone? In a large series of cases there will be many that are past help In 511 cases there were 145 in which any surgical operation was out of the question Of the remaining 366 patients no operation was considered advisable in 56 instances Of this latter number, 15 cases were, in all probability wounds of the liver Some were cases of doubtful abdominal penetration, which arrived late, and presented no symptoms suggesting involvement of a hollow viscus A few were cases of uncomplicated traumatic hematuria Wounds of the liver furnish most of the cases of undoubted penetration which it is advisable to leave alone The kidney furnishes a few as well, and about the propriety of leaving both these alone there is no difference of opinion All are agreed too, that wounds of the small gut area should be explored There is still some doubt about the best course to pursue in cases of suspected stomach injury, and in wounds which apparently involve only the colon A chart made of some hundreds of abdominal injuries shows that two thirds of the projectiles enter anterior to the lateral line of the body, when viewed from the front, and one third behind this line On the whole the posterior wound is the more dangerous An anteroposterior wound in the upper part of the abdomen is the least dangerous and a side-to-side wound lower down the most dangerous, though there is little to choose between the latter and anteroposterior hypogastric or buttock and hip wounds

A chart made of a large series of cases that were too bad for operation, and in which a single entry wound was represented by a dot and an in-and-out wound by a line, shows a darkened fan-shaped area, the apex of which is in the left costal margin This chart seems to show that, of the cases that come under observation the most dangerous wound is one of the left lower hypochondrium or upper lumbar region, for many such cases are too bad for operation A chart with all the entrance wounds plotted shows a tendency for the dots to collect toward the sides of the body This is probably connected with the presence of the great vessels in the mid line Of the cases that arrive at the casualty clearing stations, wounds of the solid viscera are very much less fatal than those of the alimentary tube When a fatal result ensues, the cause of death is, for the most part hemorrhage There is some evidence to show that wounds of the spleen and kidney vessels and of the liver veins are fatal before the cases reach the operation table Wounds of the small intestine show a mortality of 63 8 per cent , the large intestine 60 per cent , the stomach, 43 75 per cent , while the total hollow viscera mortality is 64 5 per cent This latter mortality shows the increased danger of multiple injuries, and is largely accounted for by colon injuries complicating those of the stomach and small gut The small gut injuries are serious from their multiplicity, the large gut injuries from their infectivity

31 **Gonorrhea Treated by Electrolysis**—This series is composed of sixty-nine acute and thirty-one chronic cases The average number of treatments required in the acute cases was sixteen (minimum = 5 and maximum = 34) In the chronic cases the average number of treatments necessary was twenty (minimum = 14 and maximum = 35), the duration of the disease in this group being from fourteen days to five years before commencing electrolysis Besides treatment by electrolysis, Russ only uses vaccine for rheumatic cases, and orders a little sandalwood oil after the discharge has become slight

34 **Clinical Significance of Sinus Arrhythmia**—Thorne is convinced from observation of many cases in adults, especially young adults, that the presence of any kind of irregularity in the cardiac rhythm is not a normal condition, and that it should not be disregarded People in whom arrhythmia is present are more liable to suffer from a cardiac breakdown, under mental or physical strain, than are those who have a perfectly regular pulse

Sei-I-Kwai Medical Journal, Tokyo

August XXXV No 8

37 Diabetes Mellitus Among Japanese (To be continued) S Iwai —p 43

Bulletin de l'Académie de Médecine, Paris

August 22 LXXVI, No 33 pp 121 136

38 *Plague in the Senegal (Epidemie de peste qui a sevi a Dakar et au Senegal d avril 1914 a fevrier 1915) Kermorgant —p 126
39 *Magnesium Hypochlorite in Surgery Dubard —p 134

August 29 No 34 pp 137 162

40 *Results of Vaccination Against Typhoid in the French Navy A Chantemesse —p 140
41 *Inexpensive Substitutes for Butter Lard and Olive Oil (De l utilisation de nos corps gras coloniaux, pour remedier a l insuffisance de nos corps gras metropolitains) E Maurel —p 145
42 Lip Reading for Deafness from Wounds in War (La surdite de guerre bilaterale totale Reeducation auditive ou lecture sur les levres) M Lannois and F Chavanne —p 150
43 Simplified Artificial Leg (Note sur quelques appareils nouveaux de prothese du membre inferieur) T Tuffier and Seron —p 159

38 **Plague in Western Africa**—Kermorgant gives the details of a bubonic plague epidemic in the Senegal from April, 1914, to February, 1915 The natives concealed their sick at first and the epidemic thus got a foothold During the nine months there were recorded 8,686 cases of plague with a known mortality of 1,425 cases, the population totals 20 000 Among the Europeans there were only seven cases with three deaths The entire civilian population of the towns affected were vaccinated three times and all bore it well At Dakar 8,000 natives were given a total of 13 596 vaccinations and throughout the Senegal 129,752 vaccinations were made The children had the disease in the mild ambulant, bubonic form A campaign against rats was undertaken with periodical "sulphuration" of the sewers, besides the use of traps poisons, bounties and rat virus There was an abnormally high mortality during the period of the epidemic in dogs, cats, rabbits, poultry and monkeys in captivity The cattle and horses also died off in large numbers No explanation for this high mortality could be found except that it was traced to plague bacilli in two cats, one monkey and a tame civet cat The epidemic at Dakar was apparently stamped out twice and flared up again, so there were really three epidemics

The natives like to bury the dead in the midst of their villages, and consequently a systematic transference of the natives to new villages was an important part of the campaign The site of the old villages was burned over with huge bonfires and walled off with logs stumps and brush No one was allowed to return to them or cultivate the ground The plague in this epidemic seemed to have been communicated by man to the rats of the region as no infected rats were found until late in the epidemic As soon as the suspects were isolated and the contaminated huts burnt down scarcely any new cases developed The first cases were of the pneumonic type, fatal in less than three days Under serotherapy and camphorated oil the less severe bubonic type was successfully combated when the case was seen in time or the patient had been vaccinated against plague

39 **Magnesium Hypochlorite in Surgery**—Dubard commends in high terms a 1 or 2 5 per cent solution of magnesium hypochlorite as absolutely harmless while its bactericidal power is considerable, and its preparation simple and inexpensive As a disinfectant for the wounded it is proving superior to any others yet known, including Dakin's fluid He commends it especially to obstetricians and midwives

40 **Vaccination Against Typhoid in French Navy** — Chantemesse states that there have been only 136 cases with 7 per cent mortality among the 80,000 men who were vaccinated, while there were 525 cases with mortality of 14 per cent among 60,000 not vaccinated The figures include the

entire period of the war, and both typhoid and paratyphoid Only one fatal case of typhoid occurred in a man who had been completely vaccinated, and in this case staphylococci were isolated from the meninges Three of the fatalities were from paratyphoid Two whole pages of this report are blank, the contents having been struck out by the censor

41 **Substitutes for Butter and Lard**—Maurel shows that according to general habits the daily allowance of fat consumed is about 1 gm per kg of the normal weight of the adult About half this amount is eaten in the form of meat, milk and eggs, the other half being taken to add savor to dishes 'There is such a scarcity of fats now" he says, "that there is actually a famine in fats The census of hogs in France, Dec 31 1913 showed 7 047 750 head but in July, 1916, there were only 4 448 366 a falling off of 36 per cent, and the price of lard has risen accordingly" He urges that greater use should be made of peanut oil and coconut oil which are produced in abundance in the French colonies in Africa They are wholesome inexpensive and entirely satisfactory for cooking and salad oils, as he has long proved at his own table

Paris Medical

August 19 No 34 pp 149 164

44 *Factitious Phlegmons and Jaundice to Escape Military Service (Maladies provoquees ou simulees en temps de guerre) Chavigny —p 150
45 Filiform Drainage of Infected Fractures (Le drainage des fractures de guerre infectees et le traitement des pseudarthroses) H Chaput —p 153
46 Devices for Auto Extension of Fractured Limb L Senlecq —p 156
47 Bloodletting Without Venesection (La saignee sans phlebotomie) L Plantier —p 160
48 Lesions in the Bones Not Discoverable by Roentgenoscopy (Lesions osseuses non decelables par la radioscopie) B De Laborie —p 162

44 **Factitious Phlegmons**—Chavigny says that there is no really scientific irrefutable proof that can be advanced to show that a given phlegmon is not a natural process but has been induced by artificial means This is generally subcutaneous injection of turpentine or gasoline The fact that they *occur in epidemic form and on the same part of the body is* presumptive evidence of fraud The injection of turpentine and gasoline leaves no traces on the skin, and the redness heat and tumefaction are the same as in the most respectable phlegmon but there is less pain and there is no glandular involvement Fluctuation is pronounced the fourth or fifth day but the turpentine phlegmon contains little or no pus only a mass of gangrenous scraps of subcutaneous cellular tissue The pus of a gasoline phlegmon is a whitish thick jelly The petroleum abscess smells strongly of petroleum All these substances destroy bacteria so the pus is aseptic

44 **Jaundice from Injection of Picric Acid**—Chavigny's tests have apparently demonstrated that picric acid dust, inhaled in the manufacture of munitions etc does not pass into the urine and it is not used to adulterate foods enough to have it show in the urine Hence when it is found pronounced in the urine in persons subject to military duty, this is presumptive evidence that it was taken to induce the jaundice which always follows

Presse Médicale, Paris

August 31 XXIV No 48 pp 381 388

49 *Infectious Icterus with Febrile Recrudescences M Garnier —p 381
50 Improved Auto Extension and Immobilization Apparatus for Compound Fracture of Femur (Le traitement des fractures compliquees de la cuisse par un appareil realisant toutes les conditions desirables pour la therapeutique de pareilles blessures) J Ducuing —p 383

49 **Infectious Jaundice with Febrile Recrudescence**—Garnier calls attention to the febrile recrudescence which is a special feature of certain cases of infectious jaundice It must not be mistaken for a febrile complication as it is merely part of the disease In a typical case related, after a week of apyrexia, during which the pulse had returned to normal and the amount of urine was approximating normal the temperature ran up high again and kept febrile from the twelfth to the twentieth day of the jaundice the high plane of the temperature *suggesting typhoid while the general* condition grew worse again, but the jaundice showed no aggravation, although the urine grew darker in color and scantier in amount The liver evidently suffered during the febrile recrudescence, but not to such an extent as during the onset of the disease The cyclic recrudescence in several cases cited might be superposed, the curves being so much alike Study of the blood in twenty-three cases revealed paratyphoid B in one case but in the others the blood seemed to be sterile

Revue de Chirurgie, Paris

April XXXV No 4, pp 481 635

51 *Emergency Treatment of Wounds of the Joints (Le traitement des plaies articulaires dans les ambulances) A Schwartz and P Mocquot —p 481
52 *Shell Wounds of the Knee (Plaies penetrantes du genou Resultats obtenus pendant un an (1914 1915) a l'hopital de Commercy) J Martin —p 587
53 Remote Results of Operative Treatment of War Wounds of Nerves, Fourteen Cases A Basset —p 609 *To be continued*

51 **Emergency Treatment of Wounds of Joints**—Schwartz and Mocquot devote over 100 pages to analysis of eighty-seven cases of war wounds of the knee, wrist or ankle with the ultimate outcome after operative treatment in the ambulance They comment on the wide range of the injuries that may be induced from the simplest to the most mutilating and infected, and discuss the diagnosis and indications with each type

52 **Shell Wounds of the Knee**—Martin analyzes thirty cases of shell wounds of the knee encountered among 3,000 wounded soldiers who have passed through his hands The hole made by the projectile permits more or less complete drainage so there is none of the pain and swelling we are accustomed to with a knee affection outside of war conditions The temperature running up may be the only sign of the gravity of the case In the early months of the war Martin followed the traditional methods arthrotomy, resection for arthritis persisting after drainage amputation The disastrous results forced a change to systematic exploration of the joint and early resection when found necessary, and at once the outcome became immeasurably better, with no mortality while 42 per cent died of the nineteen cases in the first group

Revue Médicale de la Suisse Romande, Geneva

August XXXVI No 8 pp 449 536

54 *Tuberculosis and the School (Tuberculose et ecole) L Jeanneret —p 449
55 *When Shall We Operate in Gallstone Trouble (Les indications operatoires de la lithiase biliaire) G Patry —p 479
56 Tumor in Cerebellopontine Angle in Woman of Sixty One H Preisig —p 510

54 **Tuberculosis and the Schools**—Jeanneret declares that it is at school and by the school that society can root out tuberculosis The physician has not only the right it is his duty to utilize the school because it is here only that effectual prophylaxis can be applied If there is no case of open tuberculosis in the environment the infant may escape infection Between 3 and 5 the lymphatic glands arrest any tubercle bacilli entering the organism This localization in the glands may be the extent of the tuberculosis invasion The child is not diseased he is merely tuberculized, sensitized The organism keeps on the defensive and gives a positive response to the tuberculin tests all through life, up to advanced age testifying to a relative immunity We can assume that practically every child is infected before it reaches 15 It is our task to distinguish between those who are holding their tubercle bacilli harmlessly imprisoned in their glands and those whose bacilli are more active and flood the blood stream now and then with their toxins The child does not develop normally looks frail and the digestion is deranged gastric anachlorhydria leading to intestinal trouble These *tuberculises evolutifs* are the candidates for phthisis in later life

Jeanneret emphasizes that tuberculosis in schoolchildren is always closed ' The children do not infect each other They contract the disease in their homes or from the teacher Every schoolchild should have his health chart the *fiche sanitaire* On this should be recorded his weight every month and his height twice a year The weight divided by the height gives a reliable index of the physiologic balance The health chart should also record the tint of the mucous membranes, and whether the child is pale or ruddy, a good or bad student, and likewise any complaints or anomaly that may be noticed The Pirquet skin test is indispensable Once positive, it need not be repeated but, if negative, it should be repeated once a year With health cards like this, kept up to date, the children with evolving tuberculosis are automatically sifted out, and these require closer examination, including roentgenoscopy

Jeanneret regards sunlight as the great regenerator in childhood He has the children's gymnastic work done in the open sunlight, the children stripped to the waist (His success with outing sunbaths," preventive heliotherapy, was described in these columns, June 17, 1916, p 2043) This idea of exercising with the upper part of the body exposed to the air has spread until now the Swiss soldiers systematically exercise in this way He adds that gymnastic exercise for children from 6 to 12 should be predominantly thoracic The child has special need of oxygen, and the only means to increase the supply of oxygen is by developing the respiratory function by gymnastic exercises of the chest This develops the chest and lungs, keeps the costal articulations flexible and thus materially reduces the predisposition to tuberculosis Training of deafmutes in phonetic exercises has aided much in reducing the predisposition to tuberculosis in this group Fully an hour in the course of the day should be devoted to gymnastic exercises in every school He describes ten basic exercises one is to place the hands on the abdomen, the forefingers meeting at the umbilicus Take a slow deep breath, pressing on the abdomen, then releasing it under slow expiration The exercises with the arms and trunk are done to correspond with deep inspiration, letting the arms fall or raising the trunk during expiration The last exercise on his list is bending forward until the palms can touch the floor, then raise the body during inspiration and bend over again during expiration

55 **Indications for Operative Treatment for Gallstones**—Patry expatiates on the importance of distinguishing between the various factors causing disturbances from the presence of gallstones Some require operative measures and others do not On the whole, he declares, the general treatment of lithiasis is medical Operative treatment should be reserved for cases of acute angiocholitis, acute cholecystitis when the symptoms indicate that the infectious process is spreading, and a stone impacted in the common bile duct when the liver shows signs of alteration In all other types of gallstone trouble the decision whether to operate should be left to the patient One can count almost absolutely on a complete cure and with the minumum of risks if the general condition is good

Correspondenz-Blatt fur Schweizer Aerzte, Basel

August 26 XLVI No 35 pp 1089 1120

57 Methylene Blue and Methyl Violet as Local Disinfectants (Beitrag zur Therapie mit Anilinfarbstoffen) E Baumann—p 1089
58 *Cases of Myoclonia Epilepsy P Wolfer—p 1105

58 **Myoclonia-Epilepsy**—Buhrer published in 1901 a case of myoclonia-epilepsy in a girl of 18, and Wolfer here describes another case in a boy of 15 the brother of the girl Another sister has seizures but no myoclonus Neither of the cases of myoclonia offer any further bases for theories as to the etiology It seems probable however that both the peripheral and central nervous system and the musculature are functionally damaged as a family trait No benefit was derived from any treatment except transient relief from sedatives

Gazzetta degli Ospedali e delle Cliniche, Milan

August 24 XXXVII No 68 pp 1057 1072

59 Mode of Action and Indications for Autoserotherapy (Studio preparatorio per conoscere il meccanismo di azione e le indicazioni della auto siero terapia) E Belliboni—p 1058

August 27 No 69 pp 1073 1088

60 *Subphrenic Abscess Six Cases A Franchini—p 1074

August 31 No 70 pp 1089 1104

61 *Diagnosis of Asiatic Cholera F Pancrazio—p 1090

60 **Subphrenic Abscess**—Franchini reports six operative cases of subphrenic abscess, and ascribes his success in all to the avoidance of general anesthesia and the scrupulous after care, but above all to the convenient mode of access he followed He resected the tenth rib from the back and incised the parietal pleura for 8 or 9 cm The lips of the incision were then sutured in a circle to the bulging portion of the diaphragm pushed up by the abscess An incision in the diaphragm released the pus and gas of a fecal odor The cavity was cleared out and dried with gauze and two large drains introduced The woman for some time before the abscess had had symptoms of acid gastritis In some cases he sutured to the skin the lips of the incision in the diaphragm In a few of his cases the abscess was accompanied by pleural effusion, percussion showing the resonance of the lung, then the dulness over the pleural effusion, below this an area of tympanitic resonance and below this the liver dulness

61 **Diagnosis of Cholera**—Pancrazio remarks that while the diagnosis of cholera is usually self-evident, yet occasionally cases are observed in which the syndrome deceptively simulates acute poisoning and others in which it is so mild that cholera is scarcely suspected He has had cases in which bacteriologic tests were repeatedly negative and even after death the cholera vibriones were found only in the bile The mild cases are particularly puzzling especially when cholera is not epidemic The essential feature of cholera, he declares, is the more or less intense intoxication of the organism This alone explains the fulminating cases in which the diarrhea and vomiting are extremely mild throughout, but necropsy discloses serious lesions in the kidneys, liver and heart The asthenia and the changes in the voice are best explained by this assumption These, with the diarrhea without pains and without meteorism, warn of cholera, they are all usually present even in the mildest cases When Pancrazio notices sudden extreme weakness, even without other symptoms, he begins to investigate at once whether there has been any liability to contact with cholera

Policlinico, Rome

August 27 XXIII No 35 pp 1043 1066

62 *Asepsis versus Antisepsis in Treatment of Wounds in War (Intorno alla cura delle ferite settiche) G Ruggi—p 1043

August Surgical Section No 8 pp 225 256

63 Pyogenic Obligatory Anaerobic Bacterium Found in a Compound Fracture (Bacillus putrificus var non liquefaciens) F Putzu—p 225
64 *Experimental Research on Cutting Wounds of the Kidney and Reimplantation of Severed Segment (Sulle estese ferite da taglio del parenchima renale e sul reimpianto di segmenti renali) G Serafini—p 236

62 **Asepsis in Treatment of Infected Wounds in War**—Ruggi's many years of experience have convinced him that the extremely complicated and delicate natural processes of defence and repair in an infected wound are best promoted by first clearing out the wound and providing ample drainage and then leaving it absolutely alone Any pressure in the wound, either from accumulation of secretions or by movements increasing the pressure, changing dressings, exploration palpation, all tend to disturb the delicate biologic processes going on in the wound, and not only spread the germs around in the wound but spread them so they will invade the rest of the body or their toxic products thus be disseminated Even the slightest displacement of any of the tissues in the wound permits germs to proliferate in the intervening spaces, in the lymph spaces and along the tendon sheaths etc, thus permitting the germs to get into the arterioles or finer ramifications of the veins The aim in treatment therefore should be to prevent the formation of a closed cavity, open it if already formed, and ensure ample drainage of all its recesses, keep the injured limb absolutely still with immobilizing apparatus and change the dressings only when absolutely necessary In his service, the dry aseptic gauze applied to the thoroughly drained wound is left untouched unless pain, hemorrhage or rising temperature call for its renewal Whenever the temperature runs up abruptly to 38 C (100 4 F), cautious examination of the

wound will show then some obstruction of drainage and the temperature drops when this is remedied The temperature may run up abruptly and drop soon again even after a change of dressings, merely from some of the toxic products being absorbed in the course of the manipulations He does not use any antiseptics except for the mouth and for much soiled wounds seen at once Those reaching him at Bologna have passed the stage when this would be effectual He cites a few typical charts, including one of a soldier seven days after comminuted fractures of the humerus, radius and ulna of the right arm Amputation seemed inevitable as the devastation of both bones and soft parts was enormous, the whole was opened up, drained with gauze, and a dry gauze dressing applied, with plaster immobilization of the arm The temperature was not permanently normal until the fortieth day During the first phase, with predominant remissions of the fever the dressings were changed seven times in the course of the twenty-seven days, and the plaster cast three times During the thirteen days of the second phase, the intermissions of the fever predominating, the dressings were changed three times and the plaster once The chart shows that each fever peak was followed by a change of the dressings and this by an abrupt decline After the first week, two weeks passed before the dressings required changing, except the outer layers for cleanliness His remarks apply only to the material in his service at Bologna, which is not reached by the wounded until several days after their injury

64 **Cutting Wounds of the Kidneys**—Serafini's experiments were made on rabbits and demonstrated that the kidney can be smoothly cut and sutured again without much damage provided the line of cleavage is parallel to that of the vessels of the parenchyma or, if slanting across the plane of the vessels of the parenchyma if the lesions are not too extensive and too deep If the cut extends half through the kidney, the attempt to preserve the part of the kidney below may prove disastrous Resection is indicated here, it leaves a functionally capable stump of the organ These statements apply only to smooth cuts, when there is contusion with crushing of tissues nephrectomy is usually indicated None of the twelve animals died in consequence of the smooth cut or developed infiltration with urine or perirenal hemorrhage A few stitches or turning in of the lips of the wound prevented complications even when the cut had extended into the kidney pelvis Few traces of the deep incision were left when it was parallel to the vessels of the parenchyma, but extensive zones of necrosis developed below when the vessels had been cut In his experiments on five rabbits with reimplantation of the segment cut off from the kidney, the implanted portion always crumbled or mortified or softened into an amorphous mass

Siglo Medico, Madrid

August 19 LXIII No 3271 pp 529 544

65 *Diagnosis and Treatment of Glaucoma A Barraquer—p 530

65 **Diagnosis and Treatment of Glaucoma** — Barraquer says that there are hundreds of victims every year in Spain because the general practitioners fail to recognize glaucoma When it develops in an acute form with vomiting and headache, they ascribe it to deranged digestion with casual neuralgia When it develops insidiously, in a chronic form, it is mistaken for senile cataract He urges that medical students should be trained especially in diagnosis of acute glaucoma, iritis and cataract and in the advice to give patients with squint and myopia to ward off aggravation Students should also be taught to recognize asthenopia and the ocular origin of dizziness and headache in some cases, and the relations between disturbances in vision and disease of the various organs outside of the eye The practitioner is often misled when a patient in bed for any trouble or one coming to the office complains of intense headache and states that he has just had an attack, cannot sleep has no appetite, and cannot see well The pulse is accelerated the tongue coated and the eyelids are swollen the eyes bloodshot and lacrimating, with mydriasis and diminished depth of the anterior chamber—all coming on within a few days The hyperemia, pushing forward of the lens and iris and the fogginess of the general vision are the revealing symptoms of glaucoma and should exclude simple neuralgia Equally important is it to detect glaucoma in its prodromal stage, from the colored halo around the flame of lamps or candles, with transient feeling of oppression over the eyebrows This condition may be mistaken for ophthalmic migraine, but there is no headache with this insidious type of glaucoma, and the symptoms persist longer than with migraine

Russkiy Vrach, Petrograd

XV No 27 pp 625 648

66 Opening Address at First Annual Meeting of Russian Radiologists O D Khvolson—p 625
67 *Study of the Biologic Action of the Roentgen Rays (K voprosu o biologicheskom dieistvii Roentgen'ovskikh lutchei) M I Nemenoff—p 629
68 Cysts of the Prostatic Vesicles G I Baradulin—p 632
69 War Wounds of Bladder (Ognestrielniya raneniya mochevogo puzirya) S L Timofieff—p 633 Commenced in No 25 p 578
70 War Wounds of the Skull V V Lavroff—p 636 Concluded in No 29—p 683
71 *Galvanometer as Substitute for Clinical Thermometer (Novii sposob izmiereniya temperaturi cheloviecheskago tiela primienenie termoelementa i galvanometra) D N Sholaster—p 640

No 29 pp 673 696

72 *Pathogenic Importance of Tenia Nana Relation of Helminthiasis to Epileptiform Attacks (O patologicheskom znachenii karlikovago tziepenya) A E Shtsherbak—p 673
73 *Dietetic Treatment of Gastric Hyperacidity (O vozmozhnosti ponizit kislotnost zheludochnago soderzhimago dietoi) P I D Sushtshevskaia—p 679 Commenced in No 28 p 656
74 War Wounds of the Skull (Ob raneniakh cherepa Habliudeniya za l ui god voeni) V V Lavroff—p 683 Commenced in No 24 p 560
75 Radiotherapy of Uterine Cancer (O liechenii radioaktivnimi veshtshestvami raka matki) V A Polubinski—p 689

67 **Biologic Action of the Roentgen Rays**—Among the results of the experiments on dogs related by Nemenoff, is the striking proliferation of the interstitial cells and the cells of the prostate gland when the testicles were exposed to the Roentgen rays He explains this by the fact that the Roentgen exposures do not modify the supply of nourishment to the testicle, and as the generative cells the cells of external secretion are destroyed under the influence of the rays the other cells get the benefit of the nourishment which otherwise would have gone to the generative cells He agrees with Bouin and Ancel that the interstitial cells are the ones responsible for the internal secretion and the secondary sexual characters Castration, by removing the whole of the testicle sweeps away both the external and the internal secretion but exposure to the Roentgen rays annuls the germinative function fully as effectually, while not interfering with the internal secretion unless by increasing it owing to the better nourishment of all the cells outside of the oversusceptible generative cells

Of course it is impossible to apply directly to man the results of experiments on animals but these striking phenomena involuntarily suggest a connection with the proliferation of the cells of the prostate in the elderly This hypertrophy of the prostate occurs exclusively at that period of life when the genital functions usually are dying out His research shows that Wilms' suggestion fo treat it with Roentgen exposures is directly contraindicated He recalls further the temporary retrogression of mammary tumors and the subsidence of uterine myomas after ovariectomy, and the atrophy of the prostate liable to follow castration On the basis of these and other data cited, he propounds the following question If the dystrophy induced by Roentgen exposures of the testicle can lead to hypertrophy of the elements of internal secretion and this to proliferation of the parenchyma of the prostate, is it not possible that the growth of benign and malignant tumors may also be the result of atypical proliferation of tissues under the influence of dystrophy of certain elements in glands with an internal secretion?

71 **Galvanometer as Substitute for Clinical Thermometer**—Sholaster relates that maximal thermometers are extremely scarce in Russia just now and very expensive and he

describes a method with which it is possible to register the body temperature with two wires attached to a galvanometer

72 **Pathogenic Importance of Dwarf Tapeworm**—Shtsherbak relates the history of a girl of 8 who presented what was assumed to be chronic true epilepsy This was the verdict of several neurologists and pediatrists who were consulted They made apparently thorough examinations, searching the stools for helminths' eggs on several occasions but never finding any This diagnosis *proved to be erroneous, as the* trouble was finally traced to the presence of tenia nana He knows of only thirty-six clinical cases on record of the tenia nana as parasite in man, and 11 were published in Russia Analyzing the nervous manifestations in his case, throughout the entire long history of the disturbances there was evident a combination of epilepsy, hysteria and migraine Some of the attacks seemed to be exclusively an epileptic seizure or a hysteria fit or an attack of migraine or various combinations This suggested helminthiasis and the stools were examined anew but nothing abnormal was found on repeated examination, but the third examination showed the eggs of the tenia nana and after the child had been finally freed from the parasites her nervous system recovered its tone and there has been no further 'epilepsy" during the nearly six years to date Thymol proved the most effectual of the drugs used in expelling the parasites, but male fern was used freely also, as is described in detail

73 **Cure of Hyperacidity by Simple Dietetic Measures**—Sushishevskaia relates five cases in minute detail to demonstrate that it is possible to train the deranged stomach into approximately normal functioning by long continued dieting, even with the restricted resources of rural practice She refers in particular to hyperacidity

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

August 26 II No 9 pp 705 804

76 *The Preclinical Courses in Medical Schools (Inrichting van het praeclinische onderwijs) G van Rijnberk—p 705
77 *Physiology of the Lacrimal Passages II (Over zelfstandige vasomotorische drukschommelingen in het traankanaal) G I Rochat and C E Benjamins—p 711
78 *Epilepsy and Dipsomania G C Bolten—p 731
79 Case of Abnormal Volitional Movements of the Eyes (Een geval van abnormale willekeurige oogbeweging) W Koster—p 748
80 *Pathogenesis of Paroxysmal Hemoglobinuria P Daniels—p 753

76 **Medical Education**—In this third article on this subject, van Rijnberk translates nearly in full, with running comment, L F Barker's address Relation of the Preclinical Courses to the Work of the Clinical Years, published in The Journal, Feb 26, 1916, p 631 Van Rijnberk's final comment is in the words *Pia vota!* by which he evidently means devoutly to be wished, but not much hope of being realized!" (See also Abstract 52 p 1051)

77 **Physiology of the Lacrimal Canals**—Rochat and Benjamins report extensive research on the rabbit lacrimal apparatus its relation to the respiration rhythm, its peristalsis under normal conditions under the influence of nicotin and under stimulation applied to the depressor and other nerves There seems to be a vasomotor automatism of central origin They locate this center in the floor of the fourth ventricle controlling the lacrimal canal on the same side

78 **Epilepsy and Dipsomania**—In this third study of certain aspects of epilepsy Bolten discusses its relation to dipsomania He concludes its eighteen pages with the statements 'Dipsomania is a symptom complex that is caused by periodically recurring dysphoria All troubles and disturbances on a basis of degeneration may induce it, so that hysteria, neurasthenia epilepsy, and all degenerative and psychopathic conditions may bring on dipsomania Many cases of dipsomania belong to the group of mild manic depressive psychoses The depression is the immediate cause The dipsomaniac does not drink because he enjoys drinking but because he wants to overcome his dysphoria, and hence he may use alcohol cocain or narcotics He has no special craving for alcohol, but only for something to drive away the blues"

80 **Paroxysmal Hemoglobinuria**—Daniels reviews what has been written to explain the pathogenesis of paroxysmal hemoglobinuria, and points out that clinical experiences do not sustain the assumption that the trouble is of the nature of anaphylaxis In both there is leukopeny, lymphocytosis, and reduction of complement, with clinical manifestations and falling blood pressure, but with anaphylaxis the temperature drops while it rises with paroxysmal hemoglobinuria and the blood coagulates extra fast, instead of coagulation being retarded, as with the anaphylactic shock On the other hand, there is *much to sustain the assumption that the* blood in these cases contains a hemolytic amboceptor, an autohemolysin, which is the cause of the phenomena when it becomes activated by an especially low temperature

Hygiea, Stockholm

LXXVIII No 15 pp 1089 1184

81 *Intermeningeal Hemorrhage at Birth with Meningitis from Bacillus Subtilis (Meningealblodning med infektion av B subtilis hos ett spatt barn) G Lindberg—p 1089
82 *Nonoperative Treatment of Hemorrhoids (Nagra ord om hæmorroidbehandlingen med suppositorier) V Berglund—p 1113
83 *Cholesteatoma Removed from Frontal Sinus (Ett fall av cholesteatom i pannhålan) A Hæggstrom—p 1122

81 **Intermeningeal Hemorrhage and Its Infection in Young Infant.**—Lindberg relates that a six weeks' babe was brought to the children's clinic at Stockholm with symptoms of purulent meningitis The child had been born two weeks before term and weighed 4,050 gm The circumference of the head was 35 cm Delivery was spontaneous after four hours of labor, but intermeningeal hemorrhage occurred and purulent meningitis developed Puncture on each side of the anterior fontanel revealed pus, *apparently restricted to the* subdural space of the right hemisphere An incision along the right coronal suture evacuated a large amount of thick somewhat malodorous pus, and the circumference of the head was reduced by 2 5 cm as about 150 c c of pus was thus removed The immediate results were good, after the shock of the operation had been overcome A serous discharge kept up and the appetite and weight improved, but the meningitis spread to the base of the brain and the child died sixteen days after the operation A bacillus was found constantly in the pus in pure culture and also in the blood in the heart after death which conformed in every respect to what we know of the *Bacillus subtilis* He knows of only one case on record of fatal subtilis infection, and the few other clinical cases of subtilis infection on record were all in adults Lindberg compares this case with others on record Necropsy in his case showed that the operation had answered its purpose In that region there was only serous fluid in the subdural space The meningitic changes found at the base of the skull were of a later date If the infection had been less virulent or the operation had been done earlier, the child might have recovered No portal of entry for the infection could be discovered It is possible that it was derived from the bowels by way of the blood

82 **Nonoperative Treatment of Hemorrhoids**—Berglund shows that suppositories, as generally used, are held back by the inner muscular ring and do not touch the hemorrhoids proper There is thus little if any medicinal action from them This is obviated by shaping the suppository to taper from the widest point near the upper end, and apply pressure to drag it down into the hemorrhoid region This he accomplishes by hooding the suppository with a compress It is placed in the center of the compress and thus hooded it is inserted in the anus, the ends of the compress hanging out of the anus and exerting sufficient pressure to hold the suppository down in the hemorrhoid region while the melting medicinal substance acts *on the hemorrhoids, and any that* escapes from the anus is caught on the compress ends below

83 **Cholesteatoma in the Frontal Sinus**—A physician of 39 noticed that his right eye was gradually becoming displaced but there were no visual disturbances nor abnormal secretion, only at times he had headache restricted to the brow over the right eye The trouble proved to be a cholesteatoma in the right frontal sinus which it had enlarged, destroying the walls on the side of the brain and orbit and pushing the latter downward and outward The growth was successfully removed through an incision in the brow

21 per cent, and of these, 3 82 per cent were cases of severe septic infection In estimating the frequency of lacerations in forceps cases, episiotomy was required in 24 73 per cent, and of these patients 51 06 per cent sustained lacerations during delivery The perineum was considerably lacerated in 16 9 per cent To avoid extensive lacerations of the cervix, it was necessary to incise the cervix in 5 65 per cent

The fetal mortality following the use of forceps varies in proportion to the mode of application In the so-called low forceps operations, the fetal mortality of the Sloan Maternity was approximately 10 per cent, in medium operations 19 2 per cent, and in high operations 38 5 per cent, an average of 14 5 per cent In the Konigsburg clinic the fetal mortality attending the use of forceps was 12 45 per cent In this clinic the high application of forceps had a mortality of 33 33 per cent for the children

Gans made an effort to trace the subsequent history of children delivered by forceps In seventy cases one had failed to develop normally, and birth pressure had unquestionably been the cause of retarded growth Another child delivered by the easy application of forceps had an injury to the muscles at the back of the neck and head producing contraction In four there was a history of convulsions, and these had been difficult deliveries without apparent injury at the time of birth, although two of the children had scars on the cranial bones caused by forceps It is interesting to note that in Gans' cases, among the primiparas delivered by forceps one third of them had not again become pregnant after several years This indicates some injury to the genital tract which interfered with conception

The fact that version and extraction is accompanied by a comparatively high mortality makes it difficult to compare this procedure with delivery by cesarean section if the interests of the child are to be taken into account The same criticism applies to the induction of premature labor which is accompanied by a maternal mortality of approximately 1 per cent and a high fetal morbidity and mortality

The indiscriminate application of cesarean section as a last resort is not modern obstetric surgery, but is the old and familiar error which for so long a time prevented the development of modern obstetric science In cases in which repeated attempts have been made at delivery, and infection has developed, if delivery is effected by abdominal section, it must be accompanied by the removal of the fallopian tubes and the body of the uterus Should this be declined, craniotomy or some form of embryotomy is indicated The decision to limit the classic cesarean section to proper cases is a modern decision and has resulted in great improvement The indiscriminate application of delivery by cesarean section when the mother is suffering from some dangerous disease is an error of the past and not the best teaching of the present In eclampsia, for many years, the rule was to deliver the patient immediately, and the violent and dangerous method known as forced labor was responsible for many deaths The indiscriminate application of cesarean section to eclamptic cases has thus been shown to be an error, and the limitation of the operation to a very small percentage of cases is a modern advance

When we consider the limitations of modern obstetric surgery, we come on a condition which is general throughout medicine at the present day The development of laboratory work and the use of so-called instruments of precision has led to the neglect of clinical observation made by the senses only We study the pulse more by a blood pressure apparatus than by the finger We rely more on bacterial cultures for a knowledge of the general condition of the patient than our powers of observation — by vision and touch In obstetrics we are too apt to rely on given measurements as indicating the choice of operation, rather than a thorough study of the individual case Modern obstetric surgery should be limited carefully by a thorough knowledge of the natural phenomena of labor, by the practice of palpation and auscultation in all cases, and, above all, constant observation in diagnosticating the engagement of the presenting part No more common or dangerous error is made in studying labor than to mistake the unnatural position of the head of excessive lateral obliquity for a normal engagement What is described by some writers as presentation of a parietal bone is often mistaken for a vertex presentation and for engagement If delay occurs in labor under these conditions, the forceps are applied improperly and unsuccessfully Modern obstetric surgery should be carefully classified and limited by accurate physical examination of the patient, and the tendency to resort to abdominal section should be strictly kept within certain bounds

In the treatment of patients infected during labor, the obstetrician may be tempted to resort to section when craniotomy should be performed and, if section is chosen, to leave behind the body of the septic uter A further error in these cases consists in dropping the septic stump and closing the abdomen without drainage In cases suspected but not proved to be septic, when the woman is young and in fairly good condition the effort may be made to save the uterus by packing and draining it with 10 per cent iodoform gauze, but when there is good reason to believe that septic infection is present, delivery by section should not be resorted to unless the operator is prepared to remove the tubes and body of the uterus and to leave the stump outside the peritoneal cavity

In this paper I have abstained from discussing dift ent methods of performing cesarean section In hands of competent obstetricians several methods successful and, as the obstetrician acquires wi experience, he will choose his method in accordan with the needs of the individual case

The most important and essential limitation in mo ern obstetric surgery is the choice of those persons wh shall practice it Modern obstetric surgery can best done by obstetricians, and not by general surgeons by gynecologists The technical performance delivery by abdominal section is in many cases co paratively simple, and the general surgeon and gyn cologist are inclined to vary the monotony of th practice by short excursions into the field of obstetri but they lack the practical experience which is the b of all sound judgment in deciding to perform obstetric operation and in choosing the best method

Modern obstetric surgery has been slow in deve ment because human life has been cheap Compe tion has been willingly given for the removal of abd inal tumors with a reasonable certainty that they w not return But the birth of a child is the beginning trouble and expense for a considerable period of yea and the legal value of human life is its wage earning capacity This is well exemplified in the experience of a young general practitioner who had been trained in modern methods of antisepsis He was called to attend the patient in her home and made every effort to secure a proper aseptic technic The husband interrupted him in this, saying that this was an ordinary case of confinement and that he could not afford to have all this done for his wife The enormous waste of human life going on at present has created a sudden and renewed interest in obstetrics, and the time is ripe for securing a permanent advance in this branch of medicine The multiplication of hospitals throughout the country, the opening of maternity wards, and the better training of medical students will produce a certain number of obstetricians capable of properly performing modern obstetric surgical operations To these men cases of complicated labor will come and will receive proper attention with a corresponding lessening in maternal and fetal mortality and morbidity and a decided increase in the working capacity, reproductive ability and general health of women

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MEDDLESOME MIDWIFERY IN RENAISSANCE *

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According to the Bureau of Census, in 1914 there died in the United States 10,518 women during childbirth This figure represents the deaths in two thirds of the estimated population of the United States On this basis we must admit that there are about 15,000 deaths from childbirth in this country every year This number does not take into consideration the postponed mortality, as, for example, that from operations undertaken to correct the bad effects of childbirth, and that from conditions which are not readily ascribed to the fact of childbirth, such as endocardial disease, nephritis from puerperal infection, etc , nor does it include those deaths in which the women are buried under another diagnosis, either ignorantly or intentionally I think that no exception will be taken to the statement that there die annually in the United States 20,000 mothers during childbirth The mortality of the newborn children also is noteworthily high, although it is impossible to show by statistics how many children die every year from the immediate and remote effects of childbirth Most of us, however, certainly those connected with hospitals, know that too many children are lost at birth, or from the late effects of either spontaneous or instrumental delivery

Of great importance is the continued excessively high morbidity of both mothers and babies as the result of labor One of the most striking facts of the modern hospital treatment of parturient women is the still high percentage of women who have moderate degrees of fever during the puerperium, in spite of most rigorous aseptic and antiseptic precautions According to the report of the Census Bureau, 4,664 women died of sepsis in 1914, but it is impossible to even guess how many women suffered from puerperal infections and carry the marks of the disease If we estimate the mortality of all cases of puerperal infection as 5 per cent, this would mean that there were about 100,000 infected puerperae in the United States in 1914 This estimate is, I am sure, too low All the hospitals with which I have been connected for the last twenty-five years show varying percentages of puerperae with fever At times as high as 15 per cent has been reported These women in the majority of instances are not very sick, the fever seldom goes above 102 F , and if it does it is not high long The temperature is usually ascribed to other causes, but it is most often due to a mild pelvic infection with which the puerpera is well able to cope But although the women recover, often quite promptly, the pelvic inflammation leaves permanent traces in the form of peritoneal adhesions or parametric thickenings, and later uterine displacements This fact was emphasized by Emmett long ago, but it deserves repeating The patient recovers and leaves the care of the obstetrician, but she comes back again for relief of distressing symptoms which he will find it hard to relieve The procession of women passing through our dispensaries and private consulting rooms, repeating monotonously the statement, "Doctor, I have never been well since my baby was born," should draw our attention to the fact that things are not right in obstetric practice

I have studied my case cards carefully and find that the majority of women who have borne children suffer from physical damage due to childbirth As a cause of uterine disease, in my gynecologic practice, childbirth is much more frequent than gonorrhea True, vesicovaginal and other fistulas and complete perineal lacerations are more seldom met, as compared with olden times, but minor degrees of laceration, prolapsus uteri, etc are certainly no less frequent If we were to judge from the prevalence of operations corrective of uterine displacements, we would have to say they are more frequent than formerly, but we are nowadays submitting more of these cases to operation

As a producer of invalidism and semi-invalidism, the lacerated cervix is, in my opinion, more often culpable than a corresponding degree of perineal laceration The patulous os allows the cervical mucous membrane frictional contact with the septic vagina, the open cervix permits the entrance of bacteria into the uterus, the diseased mucosa is a focus of infection, and even low grades of inflammation can produce bad aftereffects The lymphatics, being loaded continually with bacteria and toxins, become inflamed, the connective tissue in the uterine ligaments soon takes part in the process Parametritis postica is almost a constant attendant on chronic cervicitis Backache, bearing down sensations constipation, dysmenorrhea, semi-invalidism, are the symptoms of parametritis postica Sooner or later, the infection travels upward along the lymphatics to the uterus, and chronic metritis results Some authors call the enlarged, fibrous, heavy uterus simply myometropathia I prefer the other term Sturmdorff has most graphically described this condition and I agree fully with him that one of the most frequent causes of this disease is the lacerated cervix I do not need to mention the other evil results of laceration of the cervix, but the tendency toward cancer, although discussable, should be borne in mind

I feel sure that the accoucheur does not accord the cervix the dignity it deserves Its mucous membrane is very delicate and easily torn, it is very sensitive to untoward influences, especially infection, and if the latter once obtains a foothold, the eradication of the same is almost impossible The cervix is the center of the tendinous supports of the uterus It may be likened to the hub of a wire wheel The cervix is the protector

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Sixty Seventh Annual Session of the American Medical Association, Detroit June 1916

of the asepticity of the uterine cavity Yet consider to what insults this organ is exposed The steel divulsors which have a stretching force of 200 pounds or more, the tearing open by so-called manual dilatation, the cervical incisions, the gentlest of all, but still damaging colpeurynter

Another structure whose physiologic and pathologic dignity is not adequately appreciated is the web of connective tissue supporting the uterus, the bladder and the rectum While tons of literature have been written on the levator ani and pelvic floor, the importance of injury to this connective tissue supporting webbing has received scant notice It may be torn or overstretched by the forces of labor or operative interference, or it may be thickened and distorted by inflammatory conditions, as was mentioned before

Much more could be said along these lines, but sufficient has been brought out in this introductory manner to serve the purpose of certain generalizations I wish to make

The methods nature employs to expel the child are best adapted to accomplish the purpose They will produce the minimum amount of traumatism to the maternal soft parts, the least degrees of dislocation of the hollow pelvic organs, and will expose the child to the smallest amount of danger The essence of these methods of nature is slow dilatation of the passages, and gradual, temperate advance of the child through them This advance is accompanied by well-planned movements of adaptation and rotation of the child, the whole, when consummated naturally, being a beautiful mechanical accomplishment, and it usually results in only a small amount of damage to either mother or baby

There is a notion, which both the public and the profession have entertained for many years, and which is becoming more prevalent among the profession of late, that natural labor should be curtailed as much as possible This latter fact is partly explained by the agitation in the lay press for relief from the suffering of childbirth, and partly by the general operative furor which has gripped the profession The old, time-tried, time-proved, and time-honored "watchful expectancy" in the conduct of labor has been replaced by a polypragmasia, pernicious in its effects, immediate and remote, and for both mother and child Methods to shorten the time of labor have been multiplied and great virtues have been claimed for them One writer brazenly advances as a virtue the saving of the obstetrician's time and sleep Without doubt, protracted and painful labor does weaken the parturient and requires a longer convalescence, but there are no permanent effects In natural labor a few hours more or less makes no difference in the immediate recovery Study of the rapidity of the recovery of women after delivery will show that the main factor in producing slow convalescence is the injury inflicted by labor, or operative delivery The amount of surgical trauma determines the smoothness of the recovery, even more than the stress of the nerves The women recover from the latter after the first good sleep, but require much longer to recover from their wounds From this point of view we must commend the use of anesthetics in the early stages of labor They permit the parturient canal to be properly dilated Unfortunately, some of them have the disadvantage of endangering the child and thus necessitating operative interference on its account The number of injuries spared by the anesthetic is thus made up by the artificial deliveries

I wish to call your attention to the most common of the evils which have gained foothold in obstetrics First among the practices which should be condemned as meddlesomeness are attempts to cut short the period of dilatation of the cervix As already explained, indeed, as every accoucheur knows, the only way to dilate the cervix safely is nature's way Manual dilatation always tears the cervix Colpeurynters often do so, and almost invariably, if traction is put on them, and in addition, they pull the cervix downward while the uterine action pulls it upward Overstretching and dislocation of the cervix result, and gynecologic and urologic disease follows Furthermore, danger of infection attends all these maneuvers, no matter how aseptically the operation is carried out True, the women seldom die of sepsis, but the morbidity, immediate and postponed, is high

Another form of interference is the indiscriminate use of twilight sleep, gas and oxygen and other anesthetics I have to admit that I use anesthetics too often and too liberally I know that as the direct result of my administration of morphin and scopolamin, of ether, gas, etc, I have increased the frequency of forceps operations, of lacerations, and of postpartum hemorrhage in my practice In the dispensary service of the Chicago Lying-In Hospital postpartum hemorrhage is very rare, in my own practice it occurs much oftener The same is true of the forceps operation While I almost never deliver a woman without some form of anesthetic I am trying to reduce the amounts required to render the woman comfortable

Another practice that should be eliminated is making the parturient bear down before the cervix is fully dilated and the head passed through it onto the pelvic floor The dislocation of the cervix, the stretching of the paracervical tissues, is one of the potent causes of procidentia uteri How much difference is there between pulling the cervix down with the obstetric forceps and forcing it down by powerful premature bearing down effort? Even after the head has come to rest on the pelvic floor it is wise to moderate the bear he down efforts We should try to save the levator and the pelvic fasciae from too rapid distention t too brisk distraction from their attachments T desire for rapid delivery should be curbed, unless d ger threatens the mother or child, and the forces nature should be restrained in the interests of the so parts and the fetal brain An extra half-hour spent the accoucheur in this part of the delivery may sa the woman from permanent relaxation of the pel floor, cystocele, rectocele, and possibly later operatio For this reason I cannot sympathize with the reviv made at the New York Lying-In Hospital, of t obstetric delivery chair Slow, spontaneous delive should be the object sought, not rapid delivery

Too frequent vaginal examinations, "ironing the perineum," must also be condemned The dan of such manipulations is in the installation of m infections which later lead to invalidism Occasion such a mild infection leads to fatal pulmonary em lism, and again a virulent sepsis results For t reasons the rectal examination should be substit for the vaginal in nearly all cases of labor It is ast ishing what may be accomplished by the rectal exam nation and it requires very little practice to acquire efficiency in it I have conducted the majority of my cases by means of this method of exploration Interns in the Lying-In Hospital often boast of the fact that they make hardly one vaginal examination in twenty deliveries, and we have diagnosed face, brow, breech, occiput posterior presentation, prolapse of arm and cord, contracted pelvis, etc, in this simple, painless, harmless and rapid manner I cannot urge too strongly this point

Of all the meddling practices, giving pituitary extract is the most dangerous to mother and child Sixteen cases of rupture of the uterus produced by pituitary extract are on record[1] Dr Stowe, my associate, knows of two Others have been recounted to me, and I doubt not that many more have occurred and have never been reported Hardly a month passes but what I learn of cases in which the baby has been lost in labor rendered pathologic by pituitary extract I myself have observed the bad effects of pituitary extract on the child Lacerations of the cervix and perineum are frequent results of the violently rapid delivery under the influence of the drug I have used it a great deal First I gave 15-minim doses Now I give 3 drops and on special indication only Recently I gave 3 drops to a woman weighing 180 pounds and the resulting contraction of the uterus was so powerful and prolonged that I had to put the patient asleep with ether This contraction lasted more than five minutes and the fetal heart tones almost ceased Pituitary extract should not be used except in the presence of a real, scientific indication, and it is governed by the same conditions as the forceps operation, that is, the head *must* be engaged, the cervix completely dilated, no mechanical disproportion between the child and maternal parts, etc

The abuse of the obstetric forceps is an old charge against the profession, and, regrettable as it is, we must repeat it today In the practice of some obstetricians the majority of deliveries are done by the forceps Most often the indication is "bed time" or "office hours" or some other set appointment, such as an operation or golf Often, too, the forceps are used to correct bad practice in the early conduct of labor, for example, the use of a colpeurynter, which has displaced the head, allowing the cord to prolapse, or abnormal rotation of the head, or administration of twilight sleep during which the child's life is endangered, or giving pituitary extract, which has resulted in tetanus uteri and threatened danger to the fetus from asphyxia, or permitting too early bearing down efforts, which have tired the woman out so that she has no strength left for the actual delivery

Another form of meddlesomeness is the too frequent cesarean operation In some communities it seems that the only method the obstetricians know of solving the knotty obstetric problems is to cut them I believe some accoucheurs do not do enough cesarean sections I know that hundreds of women are mutilated by forceps deliveries and their babies killed, and all this could be prevented by cesarean section I believe the indication for section should be broadened in placenta previa, in eclampsia, and in the anomalies of the mechanism of labor Yet one is appalled when the flimsy indications for the frequent operation are discovered The main reason is the ignorance of obstetrics indeed, sometimes one must ask, with Holmes, Is obstetrics a lost art?

Even in the treatment of abortion there is too much meddling It is usually possible to stop the bleeding and procure complete dilatation by tampon, and yet it has been recommended to cut the cervix in such cases, in order to empty the uterus Hirst even believes we should not try to induce therapeutic abortion by the usual methods, but do vaginal cesarean section at once Now it is still possible to empty the uterus in two stages, letting nature do most of the work, and it will be done with less permanent damage than by a cutting operation

In conclusion, let me urge that we depart not too far from our trust in the natural forces of labor, that we still uphold the policy of "watchful expectancy" or if you prefer, "armed expectancy," that we remember that the obstetrician's duty is not to make of labor a surgical operation, but to conduct it as a natural function, interfering only when called on by the necessity of preventing undue suffering, or saving fetal or maternal life

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS DAVIS AND DE LEE

Dr Charles S Bacon, Chicago I would emphasize what was said about the irregular contractions of the uterus simulating fibroid tumors because that is a point often overlooked I have known serious mistakes to be made in this connection I would also emphasize the importance of the exact diagnosis of the station of the child before undertaking the forceps operation because I believe that very often forceps are applied to the head still in the inlet with the idea that the head is engaged and that the operation is easy when, as a matter of fact, we have a high forceps operation Care in the external examination, as shown by Dr Zinke, would show in every one of these cases the location or the station of the child I would raise only one question in what I heard of the paper this morning, the value or even the propriety of packing the uterus after drainage because I do not believe that packing drains, it has rather the opposite effect, that of increasing the danger of contamination It prevents drainage rather than improves it I would like to call attention to one operation that was omitted and that is, opening the pelvic girdle in the cases of moderate contraction of the pelvis where, after the test of labor and after the time for the safe performance of cesarean section has passed we must choose between destroying the child or doing something that may save it and the mother Especially in multiparas can hebosteotomy be performed The advance in obstetric surgery, I think, can be shown by the disappearance in the last twenty years of the term, accouchment force, that dreaded operation which was the only thing to be done in cases of forced delivery before the opening of the cervix and the development of the methods for which we are indebted to Duhrssen which have made possible the rapid opening of the uterus in the few cases where it is necessary I would also call attention to the importance, in cases in which early emptying of the uterus is necessary of hysterotomy as sometimes more conservative than dilatation and curettement

Dr Rudolph Wieser Holmes, Chicago For a number of years there has been very little if any material improvement in the life expectancy of the unborn child Korosi (1874) showed that 6 05 per cent of the infants of Budapest died within fourteen days Williams (1915) showed that in his clinic the mortality was 7 05 per cent In one large clinic in 1897 the stillbirths aggregated 3 65 per cent, while in 1913 the stillbirths had gone up to 4 82 per cent in spite of the reputed beneficence of the cesarean operation I am heartily in sympathy with Dr Davis in many of his comments but I cannot let the opportunity go by without a protest against the widespread, promiscuous performance of cesarean section Just the other day I prevented a cesarean section on a woman quadripara, with three living children, the first of which alone was at all difficult, the indication placed by the physician was that he "didn t want to tear her perineum I was informed by a man in one of our Middle West towns that more cesarean babies were born than were ushered in normally and this was not entirely a facetious remark Cesarean section has been applied altogether too broadly, and the revulsion is surely coming within a brief period I am convinced that most of the complications which have been placed as indications may be more scientifically treated along pure obstetric lines, in too many instances the application of the operation is an expression of the attendant's inability to handle the case along such lines for the cesarean operation, unfortunately is the most simple abdominal operation technically that we have In the treatment of placenta praevia I have often interjected the query to my students How many men would do cesareans if they took all day, and the hystereurynter would accomplish delivery in twenty minutes? There would be few I heartily agree with Dr Davis that in general cesarean section is not the appropriate treatment for eclampsia, it is now nearly twenty years since Stroganoff began his defense of his eclamptic treatment—and has the lowest mortality of any authority in the world—it only shortly will mean that Stroganoff will come into his own, and receive the recognition which is his due that delivery, per se is not the treatment for eclampsia Peterson has fostered this tendency to operative treatment by his paper on cesarean section for eclampsia where he divides the sections performed before and after 1908 with a fetal mortality of 12 and 3 per cent respectively, however if no deaths be eliminated the mortality jumps to 40 9 and 15 5 per cent respectively Dr Davis did not touch on the vulnerability of the uterine scar after cesarean section with the probability of rupture in subsequent labor I have investigated this matter and find that there is an exceedingly high danger of this appalling catastrophy occurring In the instances in which I have been able to inspect the scars after cesarean sections I find that 16 6 per cent were vulnerable, Harrar in 50 cases, found 16 per cent, Asa Davis in 33 cases, found 18 1 per cent had vulnerable scars or the scars had ruptured, v Leuwen, in 117 cases found the scar was thinned in 20, 17 per cent This is a real danger and should be recognized that any woman who has had a cesarean section has about one chance in six of possibly having a uterine rupture

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[1] McNeile Am Jour Obst 1916 ii

Dr E Gustav Zinke Cincinnati To teach obstetrics is one thing, to practice it is another, to exercise good judgment in the management of cases is still another It was Lawson Tait who first suggested cesarean section for placenta praevia On his advice a few cesarean sections were performed, eight in all, before 1900, five of the mothers lived, and six of the children were saved In 1901, I recommended the cesarean operation for placenta praevia on theoretical grounds alone Not a man present was willing to support the stand I had taken My views were roundly condemned Today, the justification of cesarean section for placenta praevia under certain circumstances is admitted by all Every case of placenta praevia is a surgical case If carefully studied before labor the diagnosis of placenta praevia may frequently be made before hemorrhage appears In the hospital in the care of a good obstetric surgeon, a timely cesarean section will give more satisfactory results than any other method of delivery in these cases

Dr John Osborn Polak, Brooklyn I believe with Dr Davis that the success of obstetric surgery depends on (1) the diagnosis, (2) the training of the individual operator, and (3) the asepsis Regarding rupture of the section scar in the uterus following cesarean section the work done by Findlay recently not yet published has conclusively shown in the sixty-two collected cases that no rupture has taken place in the scar of a cesarean wound except where there has been definite morbidity, infection of some kind This shows us that every labor case should be studied as to its diagnosis that every questionable case should be given a test of labor under aseptic management Then when we have a complication and the woman has had the test of labor we are in position to do cesarean section extraperitoneal, intraperitoneal or transperitoneal as the choice may be, and our mortality will be practically nil This is not the result at present throughout the country in the indiscriminate use of this operation

Dr A J Rongy, New York I wish to emphasize the importance of doing a pubiotomy in cases in which cesarean section may not be performed on account of presupposed infection In the hospital with which I am connected we have done thirty pubiotomies in women, the majority of whom have had two or three dead babies The women had been attended by a general practitioner and when brought to the hospital, attempts at delivery with forceps had been made which presupposed infection These women being very anxious for living babies pubiotomy was done, no mother was lost and but six children By cesarean section the mortality would have been at least 30 per cent, and we would have lost probably eight or nine of the mothers In placenta praevia also pubiotomy is a life-saving operation Another important point is the ability to diagnose the size of the baby while in the uterus This has an important bearing on the matter of induction of labor in the early part of the ninth month

Dr E P Davis, Philadelphia I did eight symphysectomies and then stopped because I did not like the operation I am in hearty accord with Dr Holmes in his desire to stop unnecessary cesarean sections and I certainly hope that he will succeed in this effort Modern obstetric surgery has for a most important part the repair of injuries occurring at labor, and I consider no vaginal operation complete unless the surgeon gives attention to repair of cervix, pelvic floor and perineum I have not seen intravaginal gauze drainage tend to infection nor have I seen the uterus rupture after cesarean section I have had a number of patients on whom I have done cesarean section go through a spontaneous labor Once a cesarean section does not, in my experience, mean always a cesarean section For placenta praevia the operation should be immediate, so soon as the diagnosis is made I believe that injuries to the genital tract and appendages do cause neoplasms I do not believe in unnecessarily shortening labor, I have no sympathy with the modern fad in that regard It is the condition of the individual patient, and not the number of hours, or days, or the convenience of the obstetrician, that alone is to be considered Two things operating against success in modern obstetric surgery are (1) failure of the man who sees the case first to make a diagnosis, he does not practice palpation, he does not know engagement when it is there, thinks it is there when it is not, an' he interferes improperly and sends his funeral to the hosp (2) visceral disease complicating obstetric operat Women do not die of hemorrhage and sepsis, but of ch in the liver and kidney, the result of prolonged toxemia

Dr Joseph B DeLee, Chicago I wish to subscribe n heartily to the remarks of Dr Davis A point of g importance is that of rectal examination It is too bad we took so long to learn it Prolapse of the cord, poste occipital presentation breech, face, brow, all I have d nosed by rectal examination Another point is that chl form is not absolutely essential to the general practitio I have been a general practitioner I am still practi where the general practitioner practices, and I find that husband can give the patient ether as well as chlorof The only disadvantage is the increased size of the obs outfit occasioned by the ether can, and this is negligible

Statistics of Industrial Accidents—How largely the n of industrial accidents enters into the cause of our socia I am not prepared to state definitely, but with a reco from 40 000 to 45,000 killed wage earners annually and an additional 200,000 working days lost on account of fatal accidents among the rest of our working populati make bold to opine that it constitutes one of the lar causes of poverty and consequent dependency Translat into actual dollars and cents, taking the minimum of 40 000 killed at a value as producing members of society of $5,0 each, and $2 as an average wage of the nonfatally inju we have the economic loss sustained to the nation as a w on account of industrial accidents represented by the munificent sum of $600 000 000 annually —Carl M Hanse

OBSTETRICS AND GYNECOLOGY UNDER IDEAL CONDITIONS IN A GENERAL HOSPITAL *

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There is at the present time a remarkable spirit of unrest in medical centers and in medical organization throughout this country We have but recently seen the curriculums leading to the degree of doctor of medicine expanded from an indefinite course covering two or three years to a scientific course of four and in some cases five years Clinical and laboratory instruction have almost entirely superseded the old didactic methods, outpatient services are being highly organized and medical educators are discussing now the advisability of a compulsory fifth or hospital year

These remarkable changes may be attributed to two factors first, the ever increasing and exacting demands of science, and second, the pressure from the industrial world for greater and greater efficiency The reflection of this demand for an increase of scientific precision and industrial efficiency is markedly shown in present-day hospital management Hospital organization and management were, and are still in some places, regarded as political spoils For this reason it has seemed to me that it may be of interest to you to hear of the organization of an obstetric-gynecologic service in a city hospital, under the direct control of the department of charities of the city of New York, which from its foundation is an attempt at better and higher things, both from the points of scientific work and industrial efficiency

The Greenpoint Hospital is located in a densely populated and growing section, with a capacity of 200 beds, devoted to the care of acute cases It is a modern hospital with modern equipment, made up of complete departments, medicine, surgery and obstetric gynecology, each of which is under the direct and continuous charge of a chief, with well-equipped pathologic and Roentgen-ray laboratories, under the care of paid residents, and a trained resident in each of the three departments, six interns on a rotating service of two years, and fourth year medical students as clinical clerks

The description of this service would perhaps better begin with the arrangement of our staff, which may be considered under three divisions, (1) visiting staff, (2) dispensary staff and (3) house staff

The visiting staff consists of a gynecologist and obstetrician in chief, in direct charge of a fifty-bed service, twenty-five obstetric and twenty-five gynecologic beds The service is continuous There are two associate gynecologist-obstetricians, also on continuous service, alternating every four months, one being on the obstetric division while the other is on the gynecologic division

The dispensary staff is intimately associated with the hospital, one of the associates serving directly on this staff The dispensary staff is divided into two sections, each section taking three days a week, there being two men in each section

The house staff consists of a resident, intern and clinical clerks (fourth year medical students), the resident being a well-equipped ex-intern who serves for an indeterminate period of time, receives a small remuneration, $480 a year, in addition to the experience he of necessity acquires The intern is a part of the general hospital rotating service, he serves four months as gynecologic-obstetric intern and then passes to the next position

The points about this service which I wish to emphasize are as follows

1 A gynecologic-obstetric service of fifty beds under the supervision of one chief on continuous service

2 A dispensary staff intimately associated with the hospital

3 *A house staff in charge of an experienced man* who is not subject to a regularly recurring change

The desirability, even the necessity, of these points in a modern hospital should be apparent The old and in the past ever annoying question of interns is well cared for by having the service during the absence of the visiting under the supervision of a resident who is sufficiently trained to assume responsibility, and will as a rule serve at least a few years This man comes to know the desires of his chief, and takes a more personal interest in his work, for he is not to change to another service in three, four or six months' time The resident acts as senior to the rotating intern, assisting and guiding him in his work

The dispensary staff, which is intimately associated with the hospital, is necessary for the mutual benefit of both the hospital and the dispensary High-type men soon become restless under the old routine of dispensary work, but open up to them the occasional privilege of personally following a case through its entire hospital course and work which in the past was considered dull and routine becomes intensely interesting Such a dispensary staff also serves as a continual check on the character of work done in the hospital, for these men, being capable of interpreting operative results, will call continuously to the attention of the chief the ultimate character of treatment being received by the patients

A continuous service for the chief means a higher average standard of treatment for the patient, which is the primary factor to consider in regard to hospital efficiency It means a wider opportunity for scientific endeavor and therefore a more satisfactory service from the standpoint of the chief

Within the memory of many of us the obstetrics in most of the general hospitals was under the direct care of men in charge of medical service, who made no claim to special obstetric knowledge, and in fact at the present time it is notorious that the gynecology in many general hospitals is still being cared for by the general surgeon

Much credit is due to commissioners John A Kingsbury and Henry C Wright, who were directly responsible for the staff arrangement of the hospital They conceived the idea and decided on the advisability of the appointment of an advisory committee from the various departments of medicine consisting of six of Brooklyn's foremost men, whose duty it was to nominate three men whom they considered suitable to act as the three chiefs The original advisory committee plus the three chiefs form an advisory board, who act in conjunction with the commissioner for the best interests of the hospital

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* Read before the Section on *Obstetrics* Gynecology and Abdominal ery at the Sixty Seventh Annual Session of the American Medical sociation Detroit June 1916

The general character and quality of the work done in each of the three departments are regularly inspected and reported on by the members of the advisory committee

ABSTRACT OF DISCUSSION

Dr John Osborn Polak Brooklyn This paper shows what may be accomplished by the combination of obstetrics and gynecology under one head By combining these two departments the service rendered is improved and fundamental pathology in women becomes better understood, which entitles us to recognition even from the general surgeon Dr Holden has presented the organization in a city hospital, and in our organization at the Long Island College Hospital we have the same general plan of one head, controlling both departments, a resident and an intern staff From my experience of twenty odd years, hospital obstetrics cannot be well done without the assistance of trained help The intern after two or three months of obstetrics does more harm and as bad work as the ordinary practitioner With the resident system well developed one can keep his men for from two to five years and give them sufficient work to train them These men gradually supersede the assistant visiting staff The routine work is taken off of the shoulders of the attending physician, yet the responsibility is placed with him because he has to check up everything that is done These men go from these institutions and develop better obstetrics and better gynecology in other places It has been a most illuminating experience to see what the proper development of residents in obstetrics and gynecology will do for a service We had a service for nearly twenty years which did not run above 300 cases a year Since the introduction of the resident system some six years ago the cases have increased from 300 to 1 500 a year Under this system these residents work in the dispensary, follow the case to the hospital and have operative privileges under the direction of the chief

Dr Charles S Bacon Chicago It is interesting to observe how rapidly patients are going to the hospital for confinement In several of the large city hospitals from one eighth to one fourth of all the beds are taken by obstetric patients In the description of the hospital given by Dr Holden two things seem to be lacking One is an arrangement for teaching students That the hospital should not be made use of for medical students is a great pity They could obtain so much benefit and be of so much use to the hospital Another thing which is lacking is provision for research work The laboratory in such a hospital ought to be under the control of the obstetrician and his resident and there should be ample provision for laboratory work

Dr Henry P Newman, San Diego, Calif We should congratulate students who are privileged to profit by such instruction, but it must be recognized that in order to fit one for the practice of obstetrics as a specialty, and the same is true of gynecology, requires, as a paramount essential, a much wider experience a more thorough working knowledge of the intricacies of complicated cases and a more intimate understanding of the individual patient than can be obtained in the class room or from textbook formulas

Dr Frederick C Holden Brooklyn We have senior medical students who act as clinical clerks They come in groups of six for three months one month in each of the three departments The second floor of the laboratory building has five large rooms used for pathologic work and animal experimentation We have a paid resident pathologist and his work is supervised by an attending pathologist There is also a large clinical laboratory on the fourth floor of the hospital where urine blood etc., are examined We secured necropsies in 50 per cent of our fatal cases The building and equipment cost approximately $900 000

Loss of Life in War—The human loss sustained by a military power in a war may be caused by the weapons of the enemy by disease and pestilence privation and hardship, physical exhaustion, capture and imprisonment by the hostile nation, and finally, by desertion—Bodart

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ANESTHESIA IN HUMAN BEINGS BY INTRAVENOUS INJECTION OF MAGNESIUM SULPHATE *

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In this preliminary communication we wish to report briefly the course of anesthesia in three operations performed on human beings exclusively under the influence of an intravenous injection of magnesium sulphate The object of this report is, at least for the present, essentially a theoretical one These few observations, although far from being sufficient to demonstrate the practicability of this method of anesthesia, are completely sufficient to establish the theoretical question regarding the nature of the anesthesia produced by magnesium sulphate Furthermore, the theoretical information thus obtained is an indispensable step in the development of the practical application of this method In order to understand the question under discussion, a brief historical statement of the various phases in the progress of this investigation is necessary

In a series of experiments on the effects of intracerebral injections of solutions of various salts carried on some eighteen years ago on rabbits by one of us, it was observed that an intracerebral injection of 2 drops of a 5 per cent solution of magnesium sulphate produced complete anesthesia and relaxation of the animal lasting several hours On the basis of the hypothesis that magnesium is an inhibitory factor in the life phenomena, this observation led to a prolonged experimental study of the effects of magnesium salts on the animal body and to many publications on this subject In their first publication in 1905, Meltzer and Auer made the general statement that the salts of magnesium are capable of depressing the entire n- vous system, and assumed in particular that these s are also capable of producing anesthetic and ot central effects Since this first publication, quite extensive literature grew up on the subject Some the writers insisted that magnesium exerts only curare-like action, that is, the salts paralyze the mot nerve endings to such a degree that the animal is inc pable of responding to any stimulation, in oth words, that the animal which appears to be anesth tized is actually conscious during the operation a feels all the pain inflicted on it, but is incapable manifesting its sensations on account of the compl paralysis Against this assumption it is to be m tioned that in the course of their experimentation animals, Meltzer and Auer found, among others, t a combination of ether inhalation and intramuscu injections of magnesium salts, in small ineffect doses, produces a profound anesthesia Peck a Meltzer found this to hold true also for human bein Since the amount of ether used in these cases - absolutely insufficient to produce anesthesia, the ad tional effect of magnesium is apparently of centr origin While thus these observations made the assumption of the central action of magnesium highly probable, it could not be claimed that it has definitely proved it for reasons which cannot be discussed here in detail Studies of Auer and Meltzer on the effect of intravenous injection of magnesium sulphate on the various stages of the action of the center of deglutition seemed to prove definitely that magnesium affects the center of the deglutition While these observations seem indeed to prove definitely the central nature of the action of magnesium salts, it could still be assumed that the fact that magnesium salts affect some parts of the central nervous system cannot serve as evidence that these salts affect also the sensation of pain and the consciousness

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* From the Roosevelt Hospital and the Rockefeller Institute

Evidently a reliable proof for the assumption that magnesium is capable of abolishing consciousness can be obtained only from observations on human beings Intravenous injections of magnesium sulphate into human beings were made about a year ago in several cases of tetanus Whether or not the consciousness of the patients was affected could not be learned from the meager descriptions of these cases At any rate, these cases have the merit of the demonstration that certain amounts of magnesium sulphate can be given intravenously to human beings without endangering their life Furthermore, in two or three of the cases the amount injected was surely not too small In a recent series of experiments on intravenous injections of magnesium sulphate into dogs, Auer and Meltzer studied the quantity of magnesium which may be introduced without danger to the animal, and which would, at the same time, be capable of producing apparently profound anesthesia

From the recent extensive experience on the use of magnesium sulphate in cases of tetanus, we gained the general impression that human beings are more susceptible to the effects of magnesium salts than animals In trying to study the anesthetic effect on human beings of magnesium sulphate, administered intravenously, it was therefore necessary that the observations should be made with great caution, beginning with injections of only small doses The dose of magnesium sulphate used in our first case was much smaller than some of the doses used for many hours with apparent immunity by Straub in his tetanus cases We may add, further, that in our studies the patient was provided with two reliable safeguards against the prominent toxic effect of an overdose of magnesium salts (that is, respiratory paralysis) we had in readiness an apparatus for administering efficient artificial respiration, and had on hand a proper solution of calcium chlorid for use as a prompt antidote for the restoration of respiration

OPERATIONS

The patients were prepared for the operations in the usual way, except that they did not receive the initial preliminary injection of morphin In all three cases the cubital vein was exposed and a transfusion needle inserted directly into it This preliminary slight operative procedure was done under local anesthesia The magnesium solution was run into the vein through the transfusion needle from a graduated buret arranged on the principle of Mariotte's flask The number of bubbles appearing in a unit of time at the lower end of the inner tube permits a general estimation of the rapidity of the infusion This, however, was more reliably controlled by frequent reading of the quantity of magnesium which escaped from the buret in one or two minutes at a time

Case 1—March 30, 1916, G F, Italian, weighing about 160 pounds, was operated on for glandular abscess in the neck 6 per cent solution of magnesium sulphate was used in this case The infusion began at 4 29 and was finished at 5 14 p m Altogether 180 c c of the solution were infused in forty-five minutes, 80 c c of which, however, were infused in the course of the last eleven minutes, which means at an average of 8 c c per minute Shortly after the infusion was started, the patient began to complain of feeling hot, his face became very much flushed, and his forehead was covered with beads of perspiration, there was no nausea At 4 45 the pulse was 104, and respiration 28 per minute At 4 56 the pulse was 120, respiration 32 At 4 59, pulse 100, respiration 36 At 5 04, pulse 100, respiration 28 At 5 07, pulse 112, respiration 20 At the end of the infusion, pulse 112, respiration 28

The operation was began at 5 p m The patient was fully conscious, but sensation was considerably diminished He made no attempt to interfere with the operation During the last seven minutes of the operation, the patient showed no indication of feeling pain, and manifested only slight signs of consciousness The lid reflex was prompt He remained very drowsy for about fifteen minutes after the operation He responded slightly to loud calling He said that he felt weak

Twenty minutes after the operation the patient was fully awake He said that he felt a 'little bit of pain" during the operation He was very thirsty, and had a glass of ice water He had no nausea There were no after-effects of the anesthesia, and the patient made an uneventful recovery

During the last part of the operation the patient was practically under complete anesthesia and had evidently no knowledge of what was happening to him His later statement that he felt a "little bit of pain" referred to the first incision Respiration and lid reflexes remained practically unaffected While there was later some muscular weakness which may have had its origin in the action of the magnesium on the endings of the motor nerves, this peripheral action was evidently far behind the inhibitory action which the infusion of the magnesium solution exerted on pain sensation and consciousness At any rate, even this case clearly demonstrated that the magnesium solution exerts a genuine central effect which is entirely independent of any peripheral action which may or may not be present

Considering the weight of the patient, it must be emphatically stated that he received a very small dose of the salt, a dose which would be absolutely insufficient to produce a similar effect on an animal A dog of 10 kg (one eighth of the patient's weight) which would receive 23 c c of the same solution (about one eighth of the solution given to the patient) in the course of forty-five minutes would hardly show any depressive effects

Case 2—May 2, 1916, A S, weighing 120 pounds, was operated on for varicocele The infusion of a 6 per cent solution of magnesium sulphate was begun at 4 20 p m, and terminated at 5 08 p m In forty-eight minutes, 394 c c were infused The average of velocity of infusion was 8 5 c c a minute From 4 46 to 5 05, however, 235 c c were infused, which is at an average of 12 4 c c a minute Furthermore, in the one minute from 5 04 to 5 05, the large quantity of 39 c c was infused In the following last three minutes altogether only 13 c c were infused This patient also complained of heat, and his face became flushed and the forehead was covered with perspiration The patient vomited at 4 46 During the entire infusion the lowest pulse rate was 108 a minute At 4 58 the patient began to feel sleepy The first incision was made at 5 00 p m At 5 02 the patient was still moving and slightly groaning, but did not interfere with the operative procedure Anesthesia soon became very deep At 5 06 respiration was shallow and only 6 per minute The rate of infusion of magnesium was greatly reduced, respiration immediately became deeper and more frequent, about 22 per minute At 5 08 the magnesium infusion was stopped completely The operation was completed at 5 13 In the last five minutes of the operation the patient had no infusion of magnesium solution At 5 15 10 c c of a 2 5 per cent calcium chlorid solution were infused There was no need for it, as the respiration was fairly good but the injection of the calcium solution deepened the respiration visibly At 5 19 the patient answered questions He opened his eyes at 5 20 and was apparently fully awake He stated that he felt no pain whatsoever during the operation He was very thirsty, and had two glasses of ice water No nausea or vomiting followed There was no special after-effect from the magnesium infusion He passed urine spontaneously and freely which was free from albumin, casts, sugar, acetone and diacetic acid Twenty-four hours after the operation the patient began to complain of pain in the wound The temperature rose gradually to 103 F Pain and high temperature soon disappeared, however, and the patient made an uneventful recovery

In this case consciousness and sensation were completely abolished for at least ten minutes The patient had no recollection whatsoever of the operative procedure The short but very rapid infusion of the solution at a rate of 39 c c in one minute affected considerably the rate and depth of the respirations, but a reduction in the rate of the infusion caused quickly a return of the respiration to practically normal conditions

Case 3—May 26, 1916, H P, weighing 125 pounds, was operated on for double inguinal hernia The magnesium sulphate was given in this case in a 10 per cent solution Infusion was begun at 4 23 and finished at 5 14, 280 c c were infused in the course of fifty-one minutes, that is, at an average of 5 4 c c per minute However, between 4 39 and 4 52, that is, in thirteen minutes 160 c c. were infused which is at an average of 13 c c per minute Between 4 52 and 5 o'clock the infusion was stopped From 5 when the infusion was resumed again to 5 14 when it was finally stopped, only 20 c c were infused, that is at an average of about 1 5 c c per minute After about 30 c c were infused, the patient began to feel hot, was perspiring and became restless When about 63 c c were infused the patient stated that he felt weak At 4 25 (15 c c) the pulse was 120 and respiration 22 per minute At 4 33 (57 c c), pulse 120, respiration 16 At 4 45 (143 c c), pulse 96 respiration 24 the operation was started At 4 47 (182 c c) *the anesthesia was very deep, there was no spontaneous respiration, artificial respiration by pharyngeal insufflation was begun* At 4 50 the pulse was small, 96 the patient pale and slightly cyanotic, the pupils slightly dilated and fixed At 4 52 the magnesium was stopped From 4 47 to 4 56 for nine minutes, there was no sign of a spontaneous respiration At 4 56 occasional spontaneous respirations appeared At 4 58 spontaneous respirations were regular 20 a minute, the pulse was 90 a minute and bounding At 5 o clock the patient's color was good respiration regular, pulse 120 Magnesium was started again At 5 03 the lid reflex was still absent, pulse 112, respiration 22 At 5 06 the lid reflex was coming back At 5 08 the pulse was 118 respiration 20 At 5 10, pulse 100 respiration 22 At 5 13, pulse 96 respiration 26 At 5 14 magnesium infusion was stopped At 5 21 the operation was finished, the pulse was 108 respiration 27 At 5 31 the patient opened his eyes when spoken to

He was conscious on return to the ward very thirsty and was given 6 ounces of water in ten minutes There were no nausea and no vomiting *The patient asked whether he had already been operated on*

On the second day after operation the patient complained of abdominal pains, the abdomen was moderately distended and rigid The temperature rose to 102 4 F The patient was about normal again on the third day, and recovery was uneventful

In the two days following the operation the urine showed a trace of albumin and many hyaline casts but no sugar

During the infusion of the magnesium solution the patient was completely unconscious for about forty minutes, when he came out of the anesthesia he had no recollection of the events of the operation For at least ten minutes there was no spontaneous respiration, the respiratory function was then maintained exclusively by artificial respiration (pharyngeal insufflation) Under the magnesium anesthesia the lid reflex was absent for about twenty minutes For a few minutes the pulse became slow, and for from ten to fifteen seconds it was even irregular and at times imperceptible It is possible that with the concentration used in this case (10 per cent) the magnesium solution may exert also a cardiac effect This concentration, therefore, ought not to be used until we have learned more of the effects of magnesium sulphate on human beings when used intravenously

SUMMARY

The observations made in these cases prove conclusively that the state of anesthesia which is produced by injection of magnesium sulphate is actually anesthesia, that is, in this state sensation as well as consciousness are temporarily more or less completely abolished This central effect may or may not be accompanied by a pronounced paralysis of the endings of the motor nerves of a great part of all skeletal muscles Evidently, the central effect, especially the effect on the sensation of pain and on consciousness, can be attained with a smaller dose of the magnesium salt than that which is required for a paralysis of the motor nerve endings The central effect also appears to set in sooner than the peripheral one

The employment of intravenous injection of magnesium salt as an anesthetic may prove to be indeed a practicable and advantageous method, because, in the first place, it may cause simultaneously a moderate degree of relaxation of the muscular mechanism, and, secondly, because the untoward effects can be rapidly reversed by a careful administration of a solution of calcium chlorid This method, however, before it can be made practically serviceable, will require a good deal of careful study We shall, therefore, at least for the present, abstain from a discussion of the possibility of the practical applicability of this method

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Venereal Diseases and Militarism—Venereal disease is the cause of more hospital admissions among soldiers than any other disease or group of related diseases It caused 31 8 per cent of the total military inefficiency in the British army in 1910 It was the cause of one fifth of all the British military hospital admissions for that year yet it caused but one one-hundredth of the total military deaths It causes one third of all the illness of the British navy, both at home and abroad In 1910 the navy force included 113,530 men of whom nearly 15,000 were ill of venereal diseases From 1865 to 1872 the hospital admissions of soldiers in the United Kingdom for venereal diseases averaged more than one case to every five men in some years four men in the army In the fourteen years ending 1883, the average admission rate for the whole British army in India for venereal disease was 225 cases per 1 000 men In 1895 these admissions reached the enormous proportion of 537 per 1 000 men I hasten to add that this frightful condition has been greatly ameliorated. In 1900 there were but 295 cases per 1,000 men But even this is nearly one for every three men! In very recent years the figures for the British army have been notably lowered In 1908 for example the lowest figures on record up to that time were reached These were 76 8 hospital admissions per 1 000 men of total strength of the troops in the United Kingdom and Europe From 1903 to 1907 the average admissions were 122 3 per 1,000 men of the whole army —V L Kellogg

THE SIGNIFICANCE OF PULSE FORM *

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The study of the pulse has occupied the attention of physicians from the very earliest times, and the pulse remains today one of the most accessible and important indications of the general condition of a patient In studying the pulse the following data are noted its rate, its rhythm, its tension, its size and its form More precise knowledge concerning each of these is accumulating The pulse rate, being an index of the heart rate, is of the greatest importance In certain arrhythmias, the heart rate differs from the pulse rate because some ventricular contractions produce no palpable pulse beats at the wrist This pulse deficit derives great significance from the fact that it indicates the amount of energy uselessly expended by the heart Disturbances in the rhythm of the pulse have been carefully studied in recent years both by mechanical and by electrical methods These studies have enabled us to classify the cardiac irregularities, to define their clinical significance, and to direct our therapy with greater precision than was formerly possible Changes in the tension of the pulse are now recorded in terms of systolic and diastolic pressure, and the practical gain resulting from such records need not be emphasized

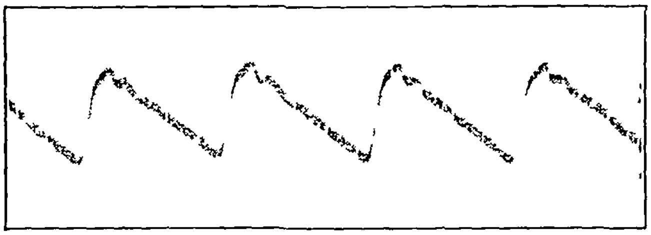

Fig 1 —Sustained pulse of extreme type Hypertension Rate 54

Our knowledge of the size and form of the pulse has not kept pace with the advances in our knowledge of other pulse factors, and yet every physician, consciously or unconsciously, bases his opinion as to the quality of the pulse very largely on alterations in its size and form For several years we have made records of the size and form of the pulse, and it is hoped that a presentation of some of our observations and impressions may be of service in the interpretation of observations that are made at the bedside

The size of the pulse has been determined by measuring the volume of the waves recorded from a plethysmograph that encloses the hand, the forearm and the lower arm The size thus determined usually varies from 0 4 to 1 c c An unusually large volume pulse usually occurs in aortic insufficiency (from 1 4 to 2 c c) In a given individual the size of the pulse is greatly affected by conditions of chilliness and warmth When a person is chilly the pulse becomes smaller, whereas when he is warm it becomes larger Variations in size from 0 26 to 0 96 c c have been observed under these conditions in a single individual Of more clinical interest is the fact that during the febrile chill the radial pulse becomes smaller, and in some cases it almost disappears As the chill abates and the patient begins to feel warm again, the pulse returns to its former size It seems probable that the small pulse observed during a febrile chill is due to a local constriction of the peripheral arteries and that it does not necessarily indicate impending cardiac failure

PULSE RECORDERS

About the middle of the past century, instrumental methods were introduced for studying the pulse form Unfortunately two factors interfered with progress in such studies In the first place the earlier instruments were subject to grave defects In order to record the rapid changes of pulse form an instrument must itself be capable of performing rapid movements Frank and Petter have estimated that an instrument should have a vibration time of not less than 32 per second in order to follow accurately the movements of the pulse in the peripheral arteries and that much more rapid rates are required of instruments which are used to record the pulse in arteries lying near the heart Since the sphygmographs and manometers in common use vibrate at rates of from 5 to 16 per second, the records obtained by such means are necessarily defective and hence there arose the discussions as to what part of the records were due to "flings" or other instrumental defects To Otto Frank belongs the credit for having analyzed the theoretical requirements of pulse recorders and for having developed an instrument which will follow accurately the contour of the pulse curve Frank replaced the usual recording lever on the tambour by a small mirror This mirror reflects a beam of light, and the movements of this beam are recorded by photographic methods on a moving sensitized surface Instruments of this type have been constructed which show vibration frequencies of 150 to 250 per second, rates amply sufficient to record the pulse in the central arteries

The second difficulty in studying the arterial pulse of man lies in the fact that instruments cannot, as in animal experiments, be attached directly to the artery Variations in arterial pressure can act on the recording device only through the medium of the vessel wall, the intervening tissues and usually some elastic receiver applied to the skin Our inability to control these factors introduces an element of uncertainty in all pressure records taken from man For this reason we have preferred to record the volume pulse in the arm by placing the latter in a plethysmograph which is connected with a Frank recorder The apparatus used shows a vibration frequency of from 50 to 110 per second, a rate which is sufficient to record the peripheral arterial pulse In the interpretation of our tracings we have been aided by momentarily obstructing the veins leading from the plethysmograph by a pressure cuff When this is done, changes in arm volume are due almost entirely to movements of blood in the arteries leading into the plethysmograph

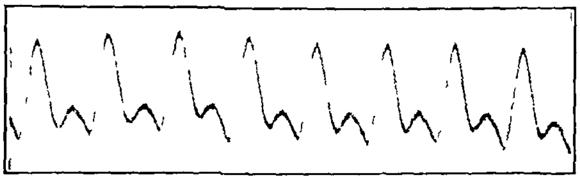

Fig 2 —Poorly sustained or pointed pulse during fever Rate 110

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* From the Department of Internal Medicine University of Michigan

* Read before the Section on Practice of Medicine at the Sixty Seventh Annual Session of the American Medical Association, Detroit, June, 1916

TYPES OF ARM PULSE

Records of the volume pulse obtained by this method allow one to distinguish two main types of peripheral pulse in man In the first, or sustained pulse, the sudden entrance of blood during early systole is followed by a gradual decline that is broken to a greater or lesser extent by the dicrotic and smaller secondary waves (Fig 1) The second type of pulse is characterized by an abrupt diminution in arm volume immediately after the entrance of the primary pulse wave (Fig 2) On palpation this gives the impression of a poorly sustained or bounding pulse In the records the primary wave is pointed and the pulse appears collapsing It may therefore be described as a poorly sustained, pointed or collapsing pulse In this pulse the smaller secondary waves are usually absent The dicrotic wave, however, varies greatly, from marked dicrotism to an almost complete absence of this wave We believe that the poorly sustained or pointed character of such a pulse is of more fundamental importance than is the size of the dicrotic wave If the veins leading from the plethysmograph are momentarily obstructed so that no blood can escape from the arm by this channel, it is readily demonstrated that the sudden drop which occurs in such a volume pulse just after the entrance of the main wave is due to a backward movement of blood in the arteries, caused as we believe by a reflection of the primary pulse wave out of the arm

This pointed type of pulse can be produced in young individuals by therapeutic doses of nitroglycerin or of amyl nitrite Of particular interest, however, is the fact that it occurs with great frequency during infectious diseases We have noted it particularly in tuberculosis associated with fever, in typhoid fever and in most severe infections When circulatory failure threatens during the course of an infectious disease, the pulse is practically always of a pointed character (poorly sustained) At the same time the size of the pulse becomes progressively smaller and its rate increases We believe that an understanding of these pulse changes would throw much light on the nature of the circulatory failure in the infectious diseases

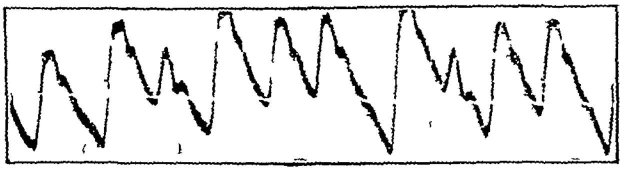

Fig 3 —Auricular fibrillation Note that the larger pulse waves are of the sustained type whereas the small waves are pointed

Relation to Blood Pressure—The relation of pulse form to blood pressure is neither definite nor constant As a rule, patients with arterial hypertension show a sustained pulse, but if nitroglycerin be given, the pulse may assume a pointed form even though both systolic and diastolic pressures still remain far above normal Patients with abnormally low pressures are prone to show a pointed pulse, particularly if suffering from febrile disease The association with low pressure is not constant, however, for we have records of sustained pulses where the systolic pressure varied from 90 to 100 and the diastolic pressure from 65 to 70

Relation to Vascular Tone—The form of the peripheral pulse is certainly influenced by the condition of the peripheral arteries The pointed pulse produced by nitroglycerin, for example, is to be attributed to a relaxation of the arteries Conversely, fairly large doses of pituitary extract, when injected into a patient with a pointed pulse, will often cause the latter to assume a sustained character Pituitary extract acts mainly by constricting the arteries It seems certain, therefore, that the form of the pulse is dependent in large part on the tone of the blood vessels[1]

Just how vascular relaxation leads to a pointed type of pulse is not altogether clear In the arm of man, at least, nitroglycerin causes no unusual escape of blood from the arteries into the capillaries, nor is the flow of blood in the arm unusually rapid in febrile conditions The change in pulse form produced by pituitary extract is likewise not accompanied by any constant change in the rate of blood flow through the arm Finally a very rapid rate of blood flow through the arm, such as can readily be produced by exposure to heat, is not accompanied by a pointed pulse It is evident, therefore, that the sudden decrease in volume is not due to an escape of blood into the arm capillaries As has been said, the escape of blood which causes the abrupt fall of volume just after the entrance of the primary pulse wave is due to a backflow in the arm arteries themselves, owing to a reflection of the primary pulse wave Such a reflection is favored by local vascular conditions in the arm These consist (*a*) in a relaxation of the larger arm arteries that permits a large pulse wave to enter, and (*b*) in a constriction of the arterioles in the arm which increases the reflection of the waves that reach them

Relation to Cardiac Output—There are reasons for believing, however, that the pointed pulse cannot be explained solely on the assumption of changes in the local vessels of the arm In fever the pulse wave which enters the arm is often unusually small Furthermore, the pulse obtained by pressure over the carotid and subclavian arteries in such patients often shows a pointed form, Wiggers[2] has published pressure tracings from the central arteries of animals which show a sudden fall of pressure during late systole Possibly a relaxation of the arteries or arterioles in other parts of the body may play a rol in such cases, but of this we have little direct evidenc

On the other hand, there is reason to believe that small or brief systolic output from the heart may contribute to the production of the pointed type of pulse In auricular fibrillation it sometimes happens that the larger waves are of a sustained character, whereas the smaller waves are collapsing (Fig 3) These smaller waves are superimposed on a relatively high diastolic pressure, but otherwise the vascular tone may be regarded as constant In such conditions the pointe pulse must be caused by a small or brief output from the heart In various forms of tachycardia also the pointed pulse may be attributed to a small or brief systolic output Finally, the pointed pulse has been observed toward the end and just after the Valsalva experiment[3] This is independent of blood pressure variations, and is probably to be attributed to a smal systolic output at these times

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[1] Both nitroglycerin and pituitary extract may also influence tl cardiac output but so far as we know the output is if anythir increased by nitroglycerin and diminished by pituitary extract Su changes would as we shall see tend to produce pulse forms of ai opposite type to those actually observed during the action of the drugs

[2] Wiggers, C J Studies on the Pathological Physiology of the Heart Figure 4 III Arch Int Med July 1915 p 140

[3] Lewis T The Influence of the Venae Comites on the Pul Tracing with Special Reference to Valsalva s Experiment and Dicrotism a Note or Anacrotism Jour Physiol 1906 xxxiv 391 Similar changes in pulse form have also been recorded by the method described in this paper

THEORY OF THE POINTED PULSE

In seeking an explanation for the foregoing facts, I wish to call attention to two more or less divergent assumptions as to the nature of the pulse. According to the first and more simple explanation, the larger arteries act like an elastic bag which takes up the blood expelled from the heart and converts the intermittent into a continuous flow. Any fall of arterial pressure during a pulse cycle is attributed to an escape of blood into the capillaries. With a given resistance this escape is somewhat more rapid at high than at low pressures, but no adequate explanation can be given for the very sudden fall of pressure sometimes observed in the central arteries during late systole or for the backflow of blood in the brachial arteries of man during the sudden fall of volume that characterizes the pointed pulse.

According to the second explanation for the arterial pulse, the latter is essentially a wave which spreads over all parts of the arterial tree and is subject to the well known laws which govern wave motion. Ordinarily this wave is of such a character and meets such resistances that it fills the arterial tree promptly and almost uniformly so that the latter behaves for all practical purposes like an elastic bag. This gives rise to the sustained pulse. Under other circumstances, however, the laws governing wave motion become more apparent and must be taken into consideration in attempting to explain changes in pulse form. I would suggest that the sudden fall of pressure which is at times observed in the central arteries toward the close of systole is due to the fact that as a wave passes along an elastic tube it causes an abrupt rise followed by an abrupt fall in pressure, even though there has been no actual backward displacement of the fluid. Similarly the retrograde movement of blood in the arm of man which characterizes the pointed type of pulse can be explained only as a reflection of the pulse wave. The pointed type of pulse, therefore, is one in which for some reason wave motion in the arterial system is particularly evident. Such wave motion would tend to be accentuated by a variety of circumstances, among which are a sudden expulsion of blood from the heart or a relaxation of the larger or smaller arteries. Even though the resistance encountered in the arterioles were sufficient to maintain a good blood pressure, the pointed pulse might still occur, owing to changes in these other factors.

PULSE FORM IN FEVER

In fever the pulse is usually rapid and of a pointed form. In size it may be normal or small. As circulatory failure threatens, the rate becomes more rapid, the pointed or poorly sustained character becomes more pronounced, and the size lessens. Doubtless the increasing rate is in part responsible for the other changes, yet the physician would hesitate to base his opinion solely on the recorded pulse rate or on the rate plus the blood pressures. He resorts to palpation of the pulse, and in doing so gains further information as to its size and quality.

What causes the small size and the poorly sustained quality of the pulse in serious infections? Are they due to arterial relaxation alone? In studying this question we have observed that when pituitary extract is administered to patients showing a pulse of this type, the pointed form can often be converted into a sustained form. Invariably, however, this change is accompanied by a further decrease in pulse size. It seems probable, therefore, that while the pointed character of the febrile pulse is due in part to a relaxation of the larger arteries, this is not the entire explanation for the febrile pulse. The small size seems to indicate that there is in addition a small systolic output from the heart.

The explanation just given is in accord with the view that is now most widely held concerning the nature of circulatory collapse in surgical shock and in the acute infections. According to this view, the difficulty lies in an insufficient blood supply to the heart, owing either to stasis in the abdominal veins or possibly to an oligemia. Henderson has shown that in the type of shock which he studied there is a diminished output from the heart, owing to a lessened supply of venous blood. At first, however, there is no fall of blood pressure, owing to a compensatory constriction of the finer arterioles. Not until the blood stream was reduced to about one third did a rather sudden fall of pressure occur. As yet we have no accurate data concerning the rate of circulation in man during the circulatory collapse of surgical shock and the acute infections. I suspect that such studies will show a reduced circulation. If this should prove to be the case, the attention given by physicians to the size and form of the pulse in surgical and infectious conditions will receive a rational explanation. By palpation the physician gains an impression as to the size of the cardiac output in these conditions.

SOME FACTORS IN THE PRODUCTION OF CARDIAC DYSPNEA *

FRANCIS W. PEABODY, M.D.
BOSTON

The symptoms most commonly complained of by patients with heart disease are palpitation, precordial pain and shortness of breath. The latter, often only noticeable on exertion, is perhaps the most frequent cause of subjective distress, so that for this reason, as well as on account of its seriousness, dyspnea is a symptom worthy of considerable attention from the clinician. A full realization of the significance of dyspnea, and a properly adapted therapy, can only be the outcome of a much more complete understanding of the pathologic physiology underlying it than we possess at present. In all probability it will be found to be a complex phenomenon which can be analyzed into several types, and in the cause of which numerous factors combine in varying degrees. Some of the etiologic factors concerned with the production of dyspnea in heart disease are already recognized fairly definitely, and it is to a consideration of these that the present paper is directed.

It will be well, at the outset, to state exactly what is meant by the term "dyspnea" for, curiously enough, although the word is in everyday use, there is apparently no generally accepted accurate conception of its significance. It is often considered to be synonymous with either rapid respiration or unusually deep respiration, but neither of these in themselves constitute dyspnea. As the derivation of the word implies, there is a subjective element, an element of discomfort or of

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* From the Medical Clinic of the Peter Bent Brigham Hospital, Boston.

* Read before the Section on Practice of Medicine at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916.

difficulty in breathing. This discomfort may depend on either an increase of the rate or of the depth of respiration, but usually it is associated with an increase in both, and depends fundamentally on a hyperpnea, or increase of the total amount of air breathed in a given unit of time. Technically, it is customary to express the pulmonary ventilation, or the amount of air breathed, in liters per minute, and this is referred to as the minute-volume. Dyspnea is present when the minute-volume approaches the maximum of which the subject is capable.

Thus, for instance, a healthy adult at rest may breathe approximately 500 c.c. per respiration, and at a rate of twelve respirations per minute. The minute-volume will then be 6 liters. On walking slowly about the room the metabolism is increased and the minute-volume of air breathed will rise nearly threefold, to about 15 liters. On walking up a flight of stairs the minute-volume may become 20 liters. Neither on walking about the room nor going upstairs, however, does the normal subject become dyspneic. By increasing somewhat both the rate and depth of his respiration he is able to raise the minute-volume from 6 to 20 liters without any appreciable subjective sensation. When, on the other hand, he begins to run, and his metabolism becomes increased so that it requires a ventilation of 60 to 70 liters a minute, he becomes dyspneic, for he has usually approached both the maximum rate and depth of respiration of which he is capable. An athlete in good training can ordinarily breathe much deeper than the individual of sedentary habits, and he may be able to raise the volume of air breathed to 80, 90, or even 100 liters a minute without any definite feeling of distress.

In brief, then, the production of dyspnea resolves itself into the problem of the relation between the demand for an increased pulmonary ventilation and the ability of the subject to meet that demand by increasing the rate and depth of his respiration. This somewhat artificial statement of the situation purposely omits reference to one very important factor, namely, the rate of the circulation. The fundamental purpose of the respiration is, of course, to promote gaseous exchange in the body tissues and this is only effected through the medium of the blood. A slow blood flow would interfere with the process of metabolism as much as would an insufficient pulmonary ventilation. One of the results, however, of an inadequate blood flow would be a further stimulation of the respiratory center. The data available with regard to the rate of the circulation and especially concerning its relation to pulmonary ventilation are so scanty and unreliable that it seems best at present to keep the attention focused wholly on the external respiration.

The factors which may produce dyspnea are, in the first place, those which cause an increase of the minute-volume of air breathed, and, in the second place, those which abnormally limit the ability of the subject to meet this increased demand. As causes of an increase in the minute-volume of air breathed there are, apart from nervous and psychic influences, three main factors to be considered: a rise of metabolism, an acidosis, and any change in the physical condition of the lungs which results in a less efficient utilization of the air breathed. The causes which tend to prevent the increase of ventilation are chiefly those which interfere with the depth of the respiration and cause a decrease in the "vital capacity" of the lungs.

In what degree, then, are these various factors to be considered as playing a part in the production of dyspnea in cardiac disease?

What, in the first place, is the state of the body metabolism? The information now at hand is based chiefly on work done in the bed calorimeter at the Russell Sage Institute for Pathology in New York, which has been subsequently confirmed and amplified by observations with the Tissot spirometer at the Peter Bent Brigham Hospital in Boston. The results show that in well-compensated patients the metabolism is within the normal limits, while in patients who are on the edge of decompensation, or who show some slight dyspnea even at rest, the metabolism is often, but not at all regularly, some 20 to 40 per cent. above the normal. Unfortunately, it has not been possible, for obvious reasons, to study severely decompensated patients. It is quite probable that in such cases the metabolism would be found to be considerably higher, but even were it double the normal, the rise in metabolism could only be regarded as in itself a minor factor in the production of dyspnea.

Much attention has been recently devoted to the role of acidosis as a cause of dyspnea in heart disease, but as yet its true significance is not wholly clear. It is possible that in certain acutely decompensated patients with pure cardiac disease, during the period when they are having severe dyspnea even while at rest in bed, there may be some slight acidosis which stimulates the respiratory center, causing an increased pulmonary ventilation. The condition is, however, transient and disappears quickly as compensation is regained. Acidosis is certainly a more imporant element in those cases in which cardiac insufficiency is associated with severe renal lesions. In them an acidosis frequently develops secondary to the nephritis. In a small percentage of instances with uremia the acidosis may be of such high degree as to cause hyperpnea resembling that of diabetic coma, but even in the more common mild grades of acidosis it has been shown to be a factor which renders the patient unusually sensitive to the production of dyspnea. While acidosis may thus play a part in the causation of dyspnea in many advanced cases of cardiorenal disease, it has not been shown to be of importance in cases which are even moderately well compensated or are without severely injured kidneys.

The significance of physical changes in the lungs in the production of hyperpnea has been demonstrated by studies with the spirometer, which show that the minute-volume of air breathed by patients with heart disease may be considerably increased, even quite apart from an abnormally high metabolism or an acidosis. Patients who are wholly without dyspnea while they are quiet may be found to be breathing 9 or 10 liters of air a minute instead of the usual normal of about 5. Since the total metabolism is approximately normal, the output of carbon dioxid per minute is normal, but as the volume of air breathed per minute is increased the expired air contains a percentage of carbon dioxid which is less than normal. These patients may be perfectly comfortable while at rest, but their reserve is greatly interfered with, and they suffer as soon as they begin to move. The minute-volume of a normal person walking slowly about in the room is about three times as great as it is while he is sitting quietly. Thus, if he breathes 5 liters a minute at rest, he will breathe nearly 15 liters when performing this exercise. A cardiac patient will show a similar relative increase of ventilation, but as he may be breathing 8 liters a minute at rest, the volume on walking will rise to nearly 24 liters The cardiac patient is thus distinctly nearer to the maximum of which he is capable, especially when, as will be shown, his maximum is much less than that of the normal person This increase of the pulmonary ventilation seems to bear a close relation to changes in the vital capacity of the lungs, and it may depend on the fact that there is a decrease in the respiratory surface of the lungs without a corresponding change in the dead space, so that a larger amount of air must be breathed in order to obtain the normal amount of oxygen per minute While an increase in the minute-volume of air breathed due to such a cause is found not only in patients who are acutely decompensated, but often in those who are quite comfortable while at rest, it is, nevertheless, of importance only in the rather severe cases

Such are the factors concerned with the production of dyspnea which act by increasing the pulmonary ventilation As opposed to these there is at least one important feature which makes it difficult for the cardiac patient to meet a demand for an increase of his pulmonary ventilation This is his inability to breathe deeply An accurate index to the degree to which the depth of respiration is limited may be had by the measurement of the vital capacity of the lungs, which is the volume of the greatest expiration after the deepest possible inspiration This is regularly below normal in cardiac patients who complain of dyspnea It has long been known that many persons with heart disease cannot breathe as deeply as normal individuals, but the significance of this fact has been rather disregarded It is, however, readily appreciated when one considers that a rise of pulmonary ventilation is brought about by increasing the rate and depth of breathing, but best and most economically by increasing the depth If, then, a patient with heart disease is unable to increase the depth of his respiration as well as a normal person, he will be at a distinct disadvantage when he begins to exercise and his metabolism rises On account of his inability to breathe deeply, the maximum amount of air that he can breathe per minute will be below the normal, and a grade of hyperpnea that will cause no symptoms in a healthy individual will produce in him the subjective sensation of dyspnea There is, indeed, a very close relation between the decrease in the vital capacity and the tendency of a patient with heart disease to become dyspneic In a large series of cases in all stages of cardiac disease the decrease in the vital capacity has been found to run almost constantly parallel to the degree of physical disability Practically all patients who give a history of abnormal shortness of breath on exertion are found to have a vital capacity below normal, and the more prominent the symptom, the lower the vital capacity This decrease in the vital capacity characterizes both mild and severe cases of heart disease so far as they have a tendency to dyspnea, either at rest or on moderate exertion, and seems the most constant factor in the etiology of the dyspnea

Briefly, then, we may summarize by saying that in patients with heart disease a decrease in the vital capacity of the lungs is an important and practically constant feature in the production of dyspnea Associated with this, and apparently depending on it, there is usually a hyperpnea in the more severe cases In many severe cases further causes of dyspnea may be the presence of an acidosis, and, to a less extent, an increase of body metabolism

ROENTGENOCARDIOGRAMS

POLYGRAPHIC SLIT TRACINGS OF CARDIAC PULSATIONS BY THE ROENTGEN RAY *

A W CRANE, M D
KALAMAZOO, MICH

The purpose of this paper is to show the practicability of Roentgen-ray tracings of the heart beat and to arouse interest in this method of cardiac study

It is sixty-nine years since Vierordt made the first tracing of the pulse Marey, Dungeon, Jaquet and other clinicians of the first rank designed sphygmographs and interpreted tracings But it was not until Mackenzie, barely fourteen years ago, working with a polygraph of his own manufacture, in a country practice in Scotland, recorded a body of observations single handed, that cardiac tracings became of recognized clinical value

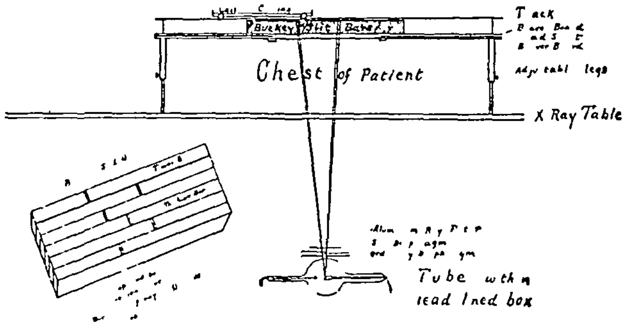

Fig 1 —Device for making simultaneous tracings of the pulsations of the heart chambers and of the aorta, by the Roentgen rays

Einthoven in 1903 produced that miracle of delicacy and precision, the electrocardiograph Gocht and Rosenthal in 1912 published a method, termed "roentgenkymography," of making polygraphic Roentgen-ray tracings of the movement of the heart This is the only paper on the subject that I have found

It remained for the researches of Mackenzie, Lewis and many others to correlate cardiac tracings with the functions of the sinus node and the auriculoventricular bundle of His, and thus to translate polygrams and electrocardiograms into clinical terms In consequence a new understanding of the irregular and disordered heart has been laid, on which has arisen a new nomenclature Auricular fibrillations, heart block, auricular flutter, alternation of the pulse, extrasystole, are terms which have thus passed into current medical literature In conjunction with these, we are becoming familiar with such technicalities as the a c p or t wave or of the a c interval

This flood of renewed interest in the old problems of the heart beat has left the whole subject of Roentgen tracings untouched Gocht and Rosenthal demonstrated the possibilities of Roentgen tracings of the heart-beat, yet their paper dropped into that oblivion of scientific archives from which so few ever return

At the present day we have the advantage of many improvements in Roentgen instrumentation and technic which combine to make roentgenocardiography a

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* Read before the Section on Practice of Medicine at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

practicable clinical method These improvements are, briefly, the Coolidge tube, ray filtration, the "Buckey effect" which is possible by the use of cellular slits, large films and safe and convenient tables

The Roentgen examination allows the clinician to determine the shape, size and position of the heart in the chest with a precision unapproachable by any other method A visual study may be made of the character of the muscle movement of the different chambers from different angles The cardiac sounds may be ausculted while the heart is beating visibly on the Roentgen-ray screen The aortic silhouette and pulmonary artery may be scrutinized, and finally without moving the patient from the table, polygraphic tracings may be made directly from the cardiac chambers

A Roentgen tracing of the heart means to most medical readers a tracing of the outline of the heart The subject of this paper, the roentgenocardiogram, is a tracing of the heart beat obtained by covering the heart with strips of sheet lead so arranged that a narrow slit in the lead can be adjusted over the pulsating margin of the cardiac silhouette as viewed by the Roentgen ray Several of these slits can be adjusted simultaneously over different areas of the pulsating heart, the aorta and the pulmonary vein A photographic film on a screen in a cassette is then made to travel at a given speed, transversely over these slits, while the Roentgen ray is turned on The result is a tracing which is similar to and comparable with a sphygmogram, a polygram or an electrocardiogram

For comparison The electrocardiogram, as you all know, is a tracing obtained on a strip of photographic film which moves across a slit Running at right angles to this slit is a very fine metallic filament which vibrates with the electric currents excited by the heart muscle An electric light behind the filament prints the vibrations on the moving film A microscope is arranged so as to magnify these vibrations and thus yield a tracing having the requisite amplitude

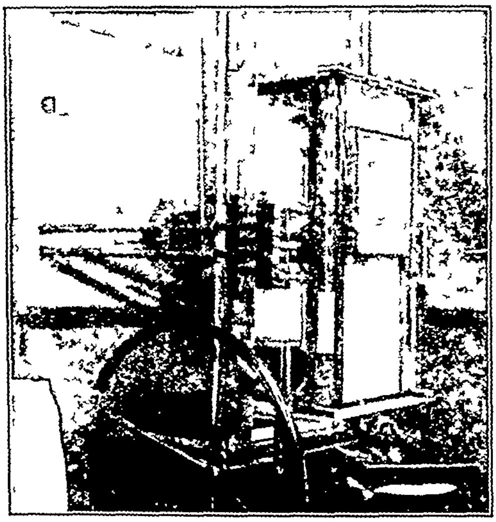

Fig 2 —Apparatus in the upright position

In the case of the roentgenocardiogram the wire filament is replaced by the edge of the heart muscle itself and the light is replaced by the Roentgen ray There is no other essential change No microscope is required

In the electrocardiogram we deal with the electrical changes in the heart, in the sphygmogram or polygram we deal with pressure variations within the blood vessels (excepting in the case of the apex beat), but in the roentgenocardiogram we deal directly with movements of the heart muscle The electrocardiogram is stated to give a record of both auricles contracting as a unit and of both ventricles contracting as a unit The sphygmogram or polygram gives records of the venous pulse and the left ventricle But the roentgenocardiogram is capable of giving a separate record of the muscle movements of each chamber of the heart In this respect it stands unrivaled

Tracings have been obtained experimentally by connecting the nose with a tambour and having the subject hold the glottis open during suspended respiration Also tracings have been obtained from a rubber tube in the esophagus The claim has been made that these tracings represent the pulsations of the right ventricle and the left auricle But it may be stated that the roentgenologic method is the only one which can furnish unquestionable tracings of these separate chambers of the heart, and produce them so as to be clinically practicable

It is evident that the polygraph, the electrocardiograph and the roentgenocardiograph, while recording different data, yet arrive at the same conclusions regarding cardiac irregularities Auricular fibrillations, heart block or auricular flutter would be recognized in substantially the same way by any one of these instruments

The electrocardiogram is a photomicrograph The real amplitude of the oscillations of the wire filament between the field magnets is so exceedingly small that the microscope is required The amplitude of the writing hand of the polygraph or sphygmograph depends on mechanical multiplication by levers and tambours But the amplitude of the heart muscle movement is sufficient without the use of any means for magnification Some increased amplitude is unavoidable, however, and it is easy to increase it still further

In the case of both the polygram and the electrocardiogram there is a complexity of machinery between the heart of the patient and the tracing But in the case of the roentgenocardiogram the heart writes its record directly on the film without essential intervention of anything whatever In the case of the polygraph or sphygmograph the impulse which moves the levers and writing fingers is transmitted through a varying length of artery or vein and also through rubber tubing or levers The jugular tracings are rendered impure by the impulse of the carotid But the Roentgen tracings are necessarily free from any and all of these complications

In the case of the electrocardiograph we are working with one of the most complex and delicate of modern clinical instruments It is of foreign manufacture Repairs and replacements are likely to be difficult, expensive and subject to long delays In the case of the roentgenocardiograph we are working with a Roentgen-ray equipment which is largely standardized and made in this country The addition required for the average Roentgen laboratory is so essentially simple that it can be made extemporaneously by the average mechanic, excepting for the motor or clockwork which runs the cassette carriage and marks the time

The polygraph has the disadvantage that, in a large proportion of cases, it is impossible to secure a venous tracing from either neck or liver The electrocardiograph when in order and free of vibrations has very few disadvantages However, it is, of course, necessary that the patient remain free from muscle movements during the taking of a tracing The contraction of any muscle excites an electric current To bend a finger is to mark a tracing Patients with exophthalmic goiter, paralysis agitans or any other disease associated with involuntary muscle movements are not suitable for the electrocardiograph

The position of the heart in the chest is also of the greatest importance A preponderance of heart muscle to the right would reverse an electrocardiogram Three leads are used and three tracings made as a rule with each patient

The disadvantages of the roentgenocardiograph are

1 Very large, heavy patients offer resistance to the passage of Roentgen rays This is overcome by using wider slits, a slower movement of the carriage and a ray of higher penetration

2 Some patients with cardiac disease cannot lie in the horizontal position This difficulty can be overcome by the sitting position, in which case the patient is placed with the back against the lead screen of the cardiograph and with the tube in front Each slit must then be adjusted over an interspace between ribs, and especial pains must be taken to immobilize the patient

3 Patients with advanced tuberculosis, pneumonia or pleuritic or pericardial effusions are not suitable for Roentgen tracings, because the outline of the heart is obscured or actually concealed Dense deposits at the hilum of the lung running downward along the heart border usually are an advantage rather than otherwise, because there is a narrow clear space between the heart and these deposits which improves the tracing

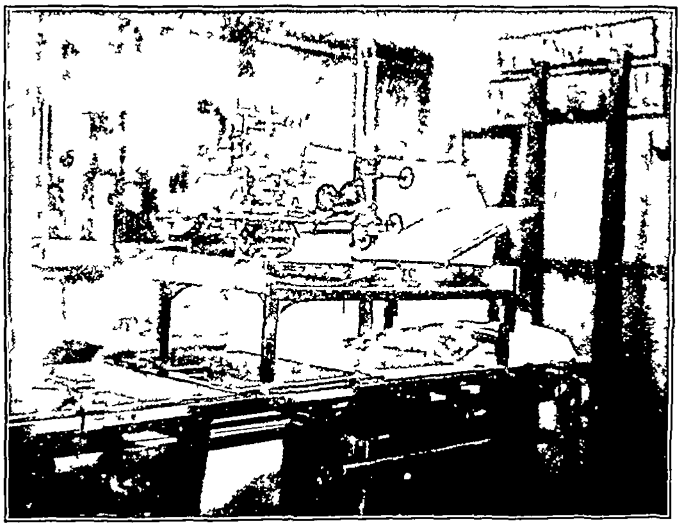

Fig 3 —Apparatus in the horizontal position

Some electrocardiographs are equipped with tambours so that ordinary polygraphic tracings may be run simultaneously with the electrocardiogram Valve sound tracings may also be included The roentgenocardiograph may likewise be equipped with tambours and a sound recorder The Roentgen ray is an ideal agent for the registration of movements of metallic pointers

The addition to a Roentgen-ray equipment which will enable the operator to make roentgenocardiograms is best illustrated by lantern slides I use a simple, crude device made by my own hands It remains for some instrument maker to supply us with a properly made roentgenocardiograph It should consist of a lead-covered table, having an open square of 8 inches in the middle It is convenient to use 10 by 12 films in cassettes The cardiographic table therefore, should have a lead covered length of 12 inches beyond the opening in each end This makes the table 32 inches long The legs of this table should be adjustable so as to allow the table to be placed over the recumbent patient without touching the face or abdomen A track and carriage allows the film to travel from one end of the table to the other over the opening The carriage should be provided with a clockwork or motor which will give several speeds to the film The average speed required is 5 cm to the second An accurate timing device is desirable, but accurate timers in use on the Roentgen-ray machine may be utilized so that a centimeter rule may be laid along a film to give time divisions if, for example, exactly 50 cm of film have taken ten seconds of Roentgen-ray exposure

Instead of a table and carriage, we may use a lead covered cylinder on which is rolled the intensifying screen and film properly protected from light The rotation of the cylinder over a single long slit will provide the mechanical requirements, in a very compact form, for simultaneous tracings of the pulsations of the right auricle and left ventricle

It is obvious that the narrower the slit or the faster the speed of the carriage, the sharper will be the line of the heart tracing, provided the Roentgen-ray exposure is properly measured The average width of slit which is practicable is found to be 2 cm The slower the transit of the film, the narrower may be the slit while preserving the same Roentgen-ray exposure of the film

If the film travels 5 cm to the second and the slit is 5 cm wide, then the exposure of the film will be one second But ⅕ second is sufficient for a film on a screen in a cassette Therefore our slit may be 1 cm wide But 2 cm is an average which gives good definition and allows more latitude for differences in patients In my experience a Coolidge tube, medium focus, set for a 5-inch spark gap and 33 milliamperes will stand the run ten seconds without trouble The distance of anode from film should average 24 inches

In order to adjust the slit bars it is necessary to use the fluoroscopic screen Two to three milliamperes with a tube set for 7 or 8-inch spark gap is ample Three mm aluminum filter should be used to increase the time limit for observations The erythema dose should never be reached The fact that the patient may be turned in other positions for additional tracings gives the opportunity for repeated observations within the limits of safety

The use of a narrow slit of Roentgen ray provided by the slit diaphragm greatly extends the time limit of safety Different sections of the heart silhouette may be used with each tracing, so as to give added information This exposes new skin areas each time The use of the film between two screens greatly lessens the exposure time By these precautions the number of tracings permissible with safety would be beyond any number required for practical purposes

The Roentgen-ray operator should know in each case exactly what quantity of Roentgen ray his patient is receiving, as a matter of system and record

It will be noticed from these tracings that there is a striking dissimilarity between the movements of the auricles The right auricle frequently gives a nearly straight or faintly undulating line, while the left auricle at the same time gives a very definite curve Again, the right auricle gives a curve of collapse while the left gives a curve suggestive of contraction

The roentgenocardiogram shows particularly well the ventricular form of the right auricular curve when present, thus demonstrating small regurgitations through the tricuspid valve which are not discoverable otherwise This ventricular form of the right auricular pulsation must be shown to be concomitant with a corresponding subsidence of the left auricular beat A question arises concerning transmitted movements of a ventricular beat to other parts of the heart

In the belief that the roentgenocardiogram with the associated Roentgen-ray study of the working heart will aid in the understanding of cardiac physiology and pathology, I urge the practice of this method

Note—The article by Dr G Canby Robinson which was read as a part of this symposium will appear in the *Archives of Internal Medicine*

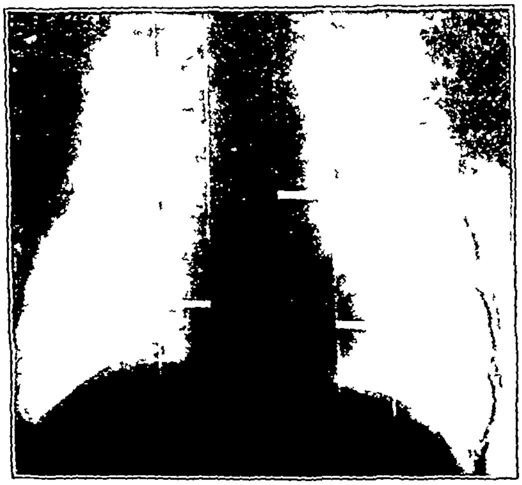

Fig 4—Roentgen image of heart, showing position of slits when adjusted over right auricle left auricle and left ventricle

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS HEWLETT, ROBINSON, PEABODY AND CRANE

Dr Frank N Wilson, Ann Arbor, Mich Abnormal ventricular complexes in the human electrocardiogram may signify the presence of one or more of the following conditions (1) Impulse formation within the ventricular conduction system below the bifurcation of the His bundle or within the muscle of the ventricular walls as in premature ventricular beats, (2) abnormal intraventricular conduction as in bundle-branch-block, (3) an abnormal distribution of the ventricular muscle as in right or left ventricular preponderance, or (4) a change in the electrical state or condition of the ventricular muscle as in the abnormal ventricular complexes showing inverted T waves obtained by the administration of digitalis to normal individuals Dr Robinson's paper deals with marked changes in the QRS group and this group of waves is affected so far as I know by the first three conditions only The ventricular complexes of right and left ventricular preponderance are characteristic and entirely different from the abnormal complexes under discussion Furthermore the impulses in all but one of Dr Robinson's cases were supraventricular in origin We must assume, therefore, that abnormal intraventricular conduction was responsible for the abnormal complexes in these instances I have seen abnormal ventricular complexes similar to those described by Dr Robinson in several instances but have not been able to correlate them with functional insufficiency of the heart They have also been a permanent feature in the cases I have observed One must believe that when this is the case there is an organic lesion of the ventricular conduction system rather than a functional depression of this system as seems to have been the case in the patients studied by Dr Robinson I have also seen instances in which only a single part of the QRS group was abnormal For instance, I have several times seen in lead 1 a perfectly normal R wave associated with a very broad distinctly abnormal S wave In such instances it would seem that a circumscribed lesion of the ventricular conduction system is present or that the functional depression of intraventricular conductivity is local rather than general I agree with Dr Robinson's interpretation of the curves he has shown and feel that his conclusions are justified at least so far as the cases he has studied are concerned

Dr S Marx White, Minneapolis I have been interested in trying to learn how far we can go in making a correct diagnosis of premature ventricular systole by polygraphic tracings independent of the electrocardiogram, since the latter is accessible to relatively few The occurrence of extrasystoles can usually be detected by using the stethoscope the first and second tones, or the first tone alone, being audible What Lewis says about exercise is of value In a study of about 150 cases we find that the use of exercise is of value in differentiating extrasystolic from other types of irregularity Have the patient exercise During the exercise the premature beats will lessen in number in the great majority of cases Following rest there will be an increase in the number per minute and they will become very clearly defined The point brought out about extrasystoles being functional should not be allowed to pass without more discussion I am convinced that premature ventricular beats mean more than a functional disturbance It may be that an increased tension in the heart wall is capable of exciting them, but a focus of increased irritability in the heart wall is also a likely source for premature beats I am particularly interested in the cases in which infection is found about the teeth or tonsils In these cases with focal infection I wish to call attention to the fact that such infection seems to have a predilection for the heart wall I think we must look on these as cases in which there is an actual microbial infection of foci in the heart wall It has been shown that in rabbits there is very frequently an infection of the myocardium when injected intravenously with fresh cultures of micro-organisms taken from the tonsils or the walls about the tonsils Such small foci of myocardial infection may readily become foci for increased irritability and thus sources of extrasystole I am skeptical and must be shown and have proved to me that this condition is functional It must be shown definitely that there is no such change as I have suggested We see acute infections and often an apparently complete recovery of the heart muscle May we not have in the heart muscle small foci of inflammation producing extrasystoles and yet have recovery so that later normal function is restored?

Dr Philip S Roy Washington Has the reading of heart charts any relationship to the therapeutic treatment? Yes I think every physician should have an apparatus for drawing the radial pulse, it is not necessary to have a time marker With such an apparatus one will be aided greatly in his therapeutic treatment Fibrillation of the auricle can be learned from a radial tracing As regards therapeutic application we all know that digitalis is a specific in fibrillation of the auricle although not curing the conditions causing it There is another condition, sinus arrhythmia, that causes much anxiety to both the family and the physician, but so soon as the radial drawing is studied we learn that the condition is not a serious one When we make charts we should learn how to recognize sinus arrhythmia, a condition which can be cured by belladonna Another condition is extrasystoles which in a large percentage of the cases can be recognized by means of the radium charts Then the therapeutic application must be made Another condition, a hopeless one, is pulsus alternans I cannot make a diagnosis of this condition without a radial chart Does the condition of the pulse always indicate the condition of the whole vascular system? I do not think so In anaphylactic shock the patient may be pulseless, yet the heart is doing good work All should have an apparatus for radial tracings, if we wish to be fair to our patients

Dr Hugo A Freund, Detroit The polygraph and electrocardiograph have cleared up many things that we have not previously understood The roentgenocardiogram will probably enlighten us further There are a number of points, however, that should be established before conclusions are drawn First, the stability of construction of the apparatus eliminating sources of mechanical error Second, the projection of the ray Third, the relative distance between the patient and the screen All these will require standardization If we could have an orthogonal projection and a tracing of such rays with the moving heart, then doubtless an accurate tracing would be assured I wish to emphasize something of interest that I have noticed in reference to the changes seen in the Q, R and S waves In those cases of slow ventricular rhythm where the deformity of the wave is as indicated by Dr Robinson, the tendency to sudden cardiac failure exists In cases of marked decompensation where a tendency of this complex to return to a more normal outline is seen under treatment, the prognosis for the time being is more favorable

Dr Francis W Peabody, Boston The administration of an alkali will relieve the symptoms, as far as they are due to an acidosis in chronic nephritis, but it is only in exceptional cases that a definite clinical effect is obtained

Dr Albion Walter Hewlett, Ann Arbor, Mich In my opinion extrasystoles arise from some part of the heart muscle which is unusually irritable and for this reason initiates a premature beat The region initiating the extrasystole may be very small and the heart muscle as a whole may be in good condition Furthermore, the excessive irritability may be due, not only to organic disease, but to toxic influences or possibly to nervous changes The presence of extrasystoles is an indication for a careful heart examination but the prognosis depends on this examination rather than on the irregularity itself Dr Peabody's careful and extensive study of cardiac dyspnea has led to the conclusion that in the main this is due to changes in the lungs It may be recalled in this connection that mitral lesions which cause pulmonary congestion are apt to be associated with early dyspnea, whereas aortic lesions cause dyspnea only in their later stages Great possibilities for further studies of the cardiac mechanism are opened up by Dr Crane's work The information thus obtained differs however, from that furnished by the electrocardiograph for the reason that the records depend on mechanical and not on electrical changes associated with the heart's movements

Dr. John Ernest Greiwe, Cincinnati Premature ventricular systoles are a functional disturbance It should be our duty to look for and find the cause of such disturbance and by removing the cause get rid of the trouble To bring this subject home in a most practical way let me recite briefly the experience of a man who had been operated on for appendicitis On the second night after the operation, the patient had an irregular pulse This alarmed both nurse and physician, who immediately resorted to subcutaneous salt solution, with the result of producing a large slough over the breast The irregularity, as I later discovered, had often been present and as the patient afterward remarked, "I could have told them immediately not to become alarmed if I had only known why they were so disturbed" In this case, the "Much Ado About Nothing" came near resulting in a damage suit

NAIL EXTENSION IN FRACTURES OF THE LOWER EXTREMITY *

JOHN C A GERSTER, M D

Fellow of the American College of Surgeons

NEW YORK

In most fractures of the lower extremity, the well established methods of immobilization by plaster cast or of continuous traction by Buck's extension or Hodgen's suspension will prevent shortening Open operation is rarely indicated—in less than 5 per cent—according to Darrach, with whom I fully agree

There is a definite group of exceptional cases in which none of the aforementioned procedures are applicable, here, nail extension has proved of value According to this method, continuous traction is applied to the ends of a steel nail transfixing the lower fragment at a point well away from the site of fracture (Figs 1, 2, 3 and 4) The nail is removed at the end of from twenty-eight to thirty-five days As a rule, by this time there is enough callus to prevent shortening Needless to say, introduction and extraction of the nail are performed under anesthesia and with the strictest aseptic precautions I have already fully described[1] the details of technic

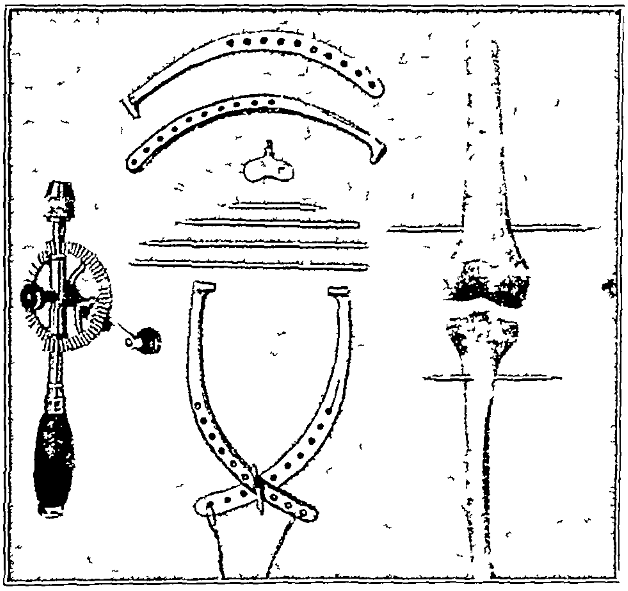

Fig 1 —Instrumentarium, nails, hand drill and tongs assembled and taken apart femur and tibia transfixed by nails in typical positions

Nail extension has been preeminently valuable in the following conditions

1 *In recent simple fractures with extensive abrasions so that a cast or Buck's extension, etc, is contraindicated* The following case will serve as an example

Case 30 —O T, a boy of 6, had been run over by an automobile, April 26, 1915 He was admitted to Mount Sinai Hospital to the service of Dr Edwin Beer There were fractures of both femurs at their middle, and extensive abrasions of thighs, legs and feet Small areas of intact skin remained just below the knees Infection of the abrasions over the right thigh led to infection of the underlying fracture hematoma (as shown by high fever on the seventh and eighth days), the abscess was drained at midthigh and buttock on the ninth day (Fig 5)

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* Read before the Section on Surgery, General and Abdominal at the Sixty Seventh Annual Session of the American Medical Association, Detroit June 1916

[1] Gerster, J C A Am Jour Med Sc, August, 1913 p 157

Knowing my interest in such cases, Drs Beer and Elsberg kindly permitted the patient to be transferred to the latter's service (the Third Surgical Division) at this time

On the eleventh day (May 7), nail extension was temporarily applied to both tibiae below the knees (for position see Figure 1) By making traction directly upward, the thighs were kept vertical thus preventing purulent discharges from seeping into the nail holes The knees were flexed at right angles and the legs were suspended by suitable loops in a horizontal position Figures 6 and 10 show the condition of affairs three weeks later (May 28), there is no shortening on the right side but considerable overlapping on the left

After twenty-three days of extension (May 30), the abrasions of the lower parts of the thighs had healed Accordingly, a second pair of nails was made to transfix the femurs just above the condyles, and those through the tibiae were withdrawn Figures 7 and 11 show nails in the typical supracondylar position, there is no shortening (June 7) A little over three weeks later (on the forty-sixth day of extension and twenty-fourth day of supracondylar extension, June 23) there was firm union of the left femur, extension on this side was discontinued

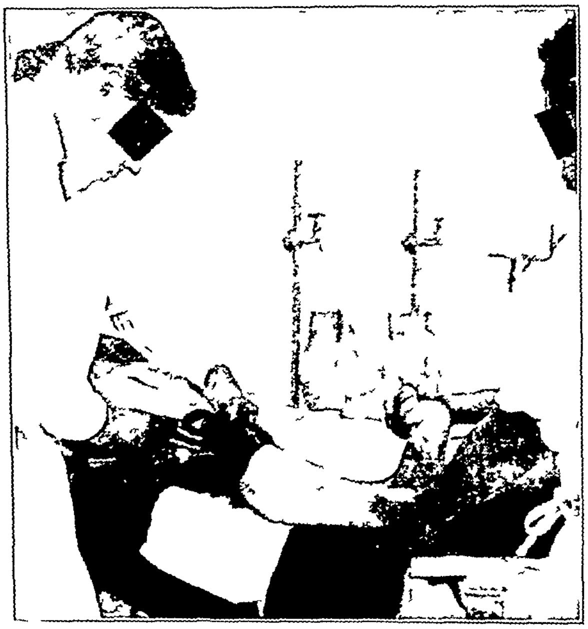

Fig 2—Insertion of nail The patient s hip knee and ankle lie close to the margin of the table One assistant grasps the foot (holding its outer margin vertically) and exerts traction Another assistant whose left arm and hand are clearly seen in the picture pulls upward on the skin of the thigh The nail penetrates the soft parts one finger s breadth above the upper margin of the external condyle Nitrous oxid anesthesia is maintained during the brief period required for drilling through bone and soft parts

The compound fracture on the right side consolidated much more slowly so that the nail was not removed until the thirty-seventh day after its application (July 6 seventy-one days after fracture) There was no sequestration Two weeks later (July 20) all wounds had healed, but, as the child was backward in learning to walk, he was kept in the hospital twenty-two days longer (being discharged, August 11 107 days after fracture) Figures 8 and 12 taken August 5, show the fractures firmly healed Six months later (Feb 3, 1916) there was firm bony union (Figs 9 and 13)

It is well not to employ nail extension in any one locality for longer than about thirty days, in this case additional time for traction was gained by utilizing two sites of attachment in succession

During the early part of the treatment (from the eighth to the twenty-second days of extension) when traction was still applied to the tibiae, I was absent, and it so happened that undue traction on the right side produced a moderate subluxation of the knee and overdistraction of the femoral fragments (Fig 6) Some shortening followed relaxation of traction (on the twenty-third day), but it was not sufficient to make the legs equal and this side remained half an inch longer There was no permanent relaxation of the knee joint, a slight but very persistent limitation to full extension, however, lasted for many months, which finally yielded after prolonged immobilization in plaster The child is now (June 1, 1916) without a limp (Fig 14)

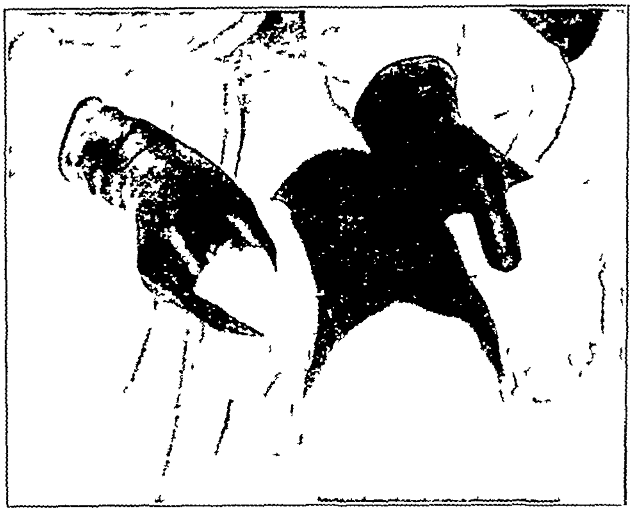

Fig 3—Application of occluding dressing (begun) The projecting nail ends transfix heavy pads of sterile gauze which can be seen turned aside to expose the nail just where it emerges from the skin After aristol (thymol iodid) and collodion are applied the gauze is replaced and covered by a bandage

In this connection it is well known that undue traction on the leg will produce a subluxation of the knee joint Such a complication can be avoided only by most careful management Figures 15 and 16 show reduction of an oblique supracondylar fracture of the femur in a woman of 35 (Case 23) by nail extension applied to the head of the tibia Similar applications of traction in three other cases (3, 4 and 10) have

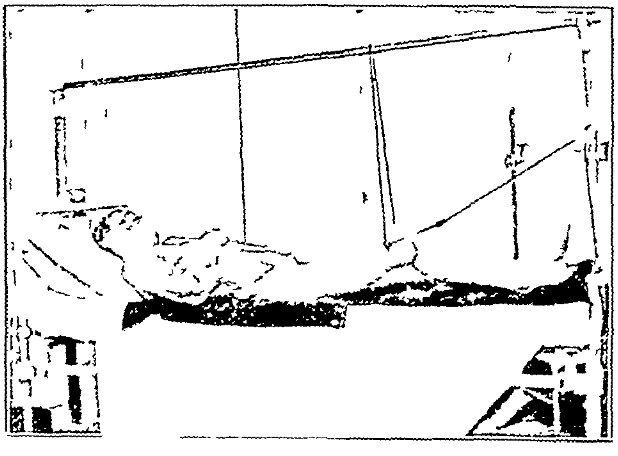

Fig 4—The traction exerted through tongs and rope suffices to keep the thigh suspended in semiflexion suspension of nail ends to the overhead bar is mainly to prevent rotary displacement For the sake of simplicity the subsequent suspension of the foot (to barely clear the bed) has not been shown From this illustration it can be seen that wounds of the leg or foot can be dressed without disturbing traction on the thigh

likewise shown no ill effect on the knee It is my opinion that traction on the semiflexed knee joint is less harmful than on the fully extended joint, the ligaments of which are already stretched to their full extent

Figure 17 shows a fracture of both bones of the leg in a woman of 45 (Case 25, Knickerbocker Hospital, service of Dr H D Collins) By the end of four days, so many blebs had developed that a cast was out of the question Nail extension for twenty-two days resulted in a satisfactory reduction (Fig 18) There was no delay in union

2 *In recent compound fractures with much destruction of the soft parts* nail extension has proved of value, especially during the first few weeks, when suppuration is at its height The patients derive great comfort because the wound can be dressed and the bedclothing changed without disturbing the fracture The method has found favor with some of the American surgeons now working in France[2] According to Dr Hermann Fischer of the German Hospital, New York, the German surgeons are making extensive use of the method

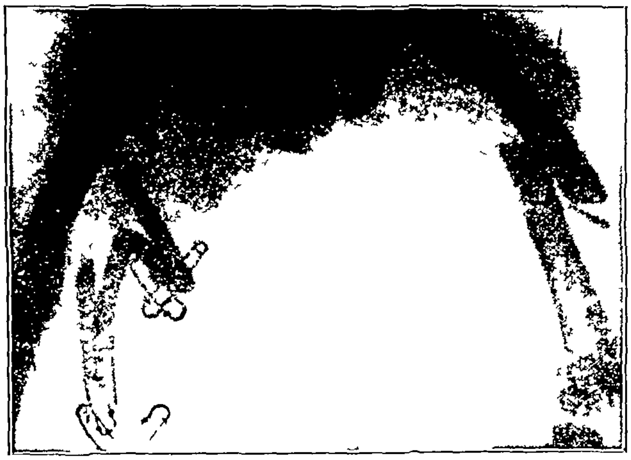

Fig 5 (Case 30) —May 6 1915 ten days after fracture of both thighs Extensive abrasions precluded application of a cast or any form of adhesive plaster extension The fracture hematoma on the right became infected and was drained at midthigh and buttock

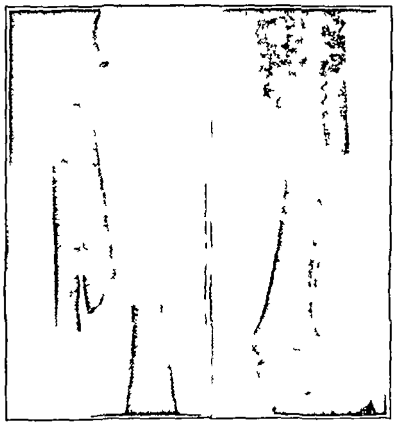

Fig 6 (Case 30) —May 28 twenty one days after nail extension Right femur anterior (*a*) and lateral (*b*) views Compound fracture drained by tubing

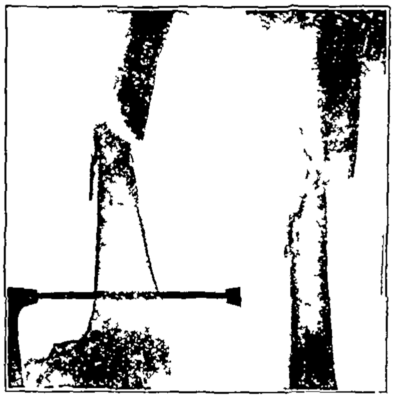

Fig 7 (Case 30) —June 7 thirty one days after extension Right femur anterior (*a*) and lateral (*b*) views Note nail in typical position

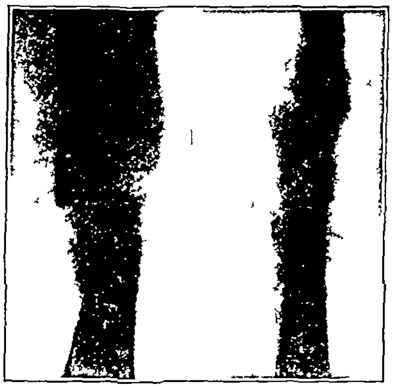

Fig 8 (Case 30) —August 5 ninety days after extension Right femur anterior (*a*) and lateral (*b*) views Wound healed there was no sequestration

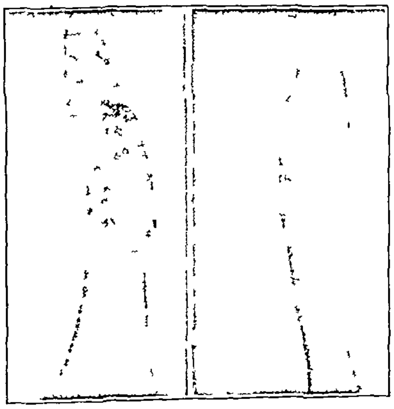

Fig 9 (Case 30) —Feb 3 1916 Right femur anterior (*a*) and lateral (*b*) views

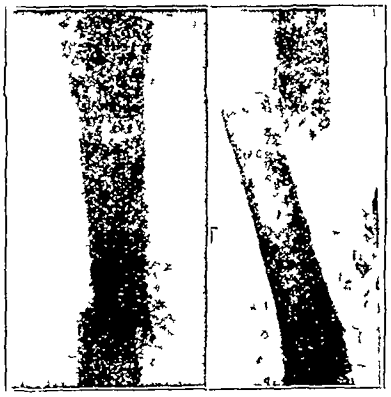

Fig 10 (Case 30) —May 28 1915 Left femur anterior (*a*) and lateral (*b*) views

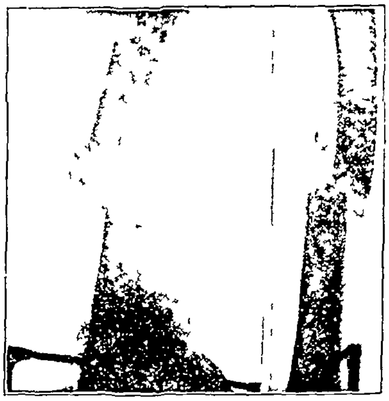

Fig 11 (Case 30) —June 7 Left femur, anterior (*a*) and lateral (*b*) views

3 *In multiple injuries to the same limb,* the method affords innumerable opportunities for improvisation A railroad employee (C H , Case 9) had sustained a comminuted fracture of the femur and a crushed foot A glance at Figure 4 will show how dressings of the injured foot were made without disturbing the traction on the femur (Polyclinic Hospital, service of Dr J A Wyeth, Nov 22, 1912)

In another case there was a fracture of the upper third of the thigh and a comminuted fracture of both bones of the leg just above the ankle There were many abrasions of the thigh Supracondylar nail extension prevented shortening of the femoral fracture, and a plaster cast immobilized the comminuted fracture of the leg The knee joint was passively exercised several times a day (G O, Case 28, City Hospital, B I, service of Dr H D Collins, Sept 19, 1914)

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[2] Fauntleroy A M Medico Military Experiences of the European War 1915

4 *In fractures of several weeks' standing with much shortening,* nail extension or open operation constitute the only means by which reduction of fragments may be accomplished Eight of my own cases belong in this class Nails were inserted as late as twenty-one days after fracture and often after fourteen days Previously, for some reason or another, the proper routine treatment had not been carried out, and the patients were seen for the first time (on their admission to the hospital) with shortenings of from 1½ to 3 inches

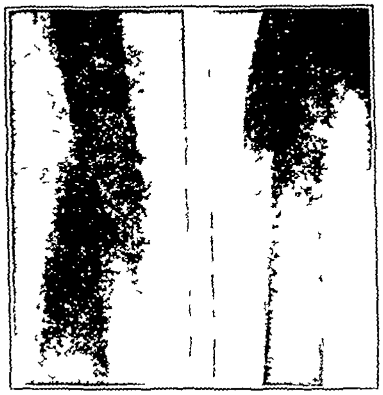
Fig 12 (Case 30) — August 5 Left femur anterior (*a*) and lateral (*b*) views

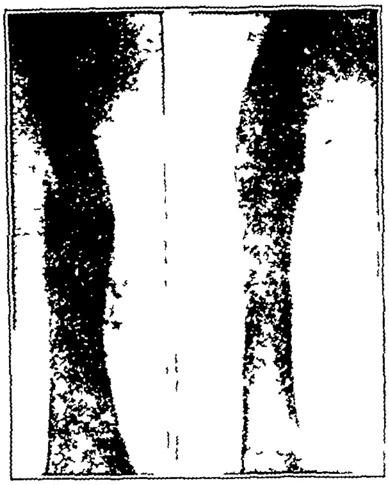
Fig 13 (Case 30) —Feb 3 1916 Left femur anterior (*a*) and lateral (*b*) views

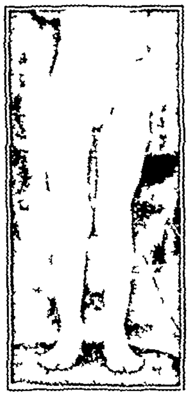
Fig 14 (Case 30) —June 1 1916 Good function no limp right femur shows one half inch lengthening

In addition to the extremely effective and relatively comfortable traction, the daily passive motion of the knee joint (in supracondylar insertions) has been a great advantage Steinmann also recommends daily massage of the fractured thigh after the first week, but I have not been in a position to give this a trial

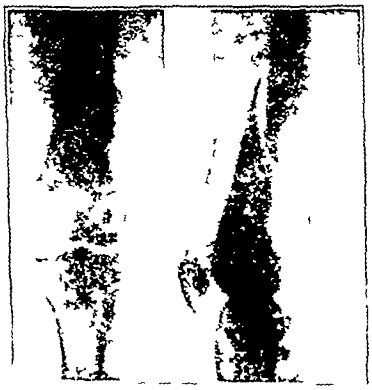
Fig 15 (Case 23) —Feb 21 1914 Fracture of the lower third of the right femur anterior (*a*) and lateral (*b*) views (nail through tibia)

The favorable results in this group are so well known that illustrative case histories are superfluous

5 *Old Mal-unions* Heretofore anything like complete correction of shortening has been impossible When such malunions were exposed at operation the upper end of the lower fragment was found so friable that no screw or other fixation contrivance could find any hold—the bone could be pared like cheese moreover the longstanding contraction of the soft parts made complete reduction impossible The surgeon was therefore obliged to content himself with partial resection of both ends and alinement of the fragments, shortening was inevitable Now, with nail extension at his disposal, the surgeon can reestablish the fracture by chiseling the fragments apart, saving every bit of the friable lower fragment He then can close the wound and apply nail extension In a few days the shortening of months is overcome Some delay in union is to be expected, even if this goes on to nonunion, it can be remedied by bone grafting with reasonable probability of ultimate success

Case 29—G H a boy of 13, sustained a fracture of the middle third of the right femur, Nov 5, 1914, for which he was treated at another hospital

February 27, 1915 (three and one-half months later), he was admitted to Mount Sinai Hospital (Service of Dr Elsberg) with a firm union and a shortening of 2¼ inches (Fig 19)

March 5 (four months after fracture), he was subjected to operation This consisted in (*a*) insertion of a nail in the supracondylar position by myself and (*b*) osteotomy for mal union by Dr W M Brickner The contracted soft tissues resisted reduction of the overlapped fragments even after the division of the cicatricial tissue in the soft parts adjacent to the site of fracture The wound was closed in layers Traction was begun with 14 pounds, within five days this was gradually increased to 23 pounds

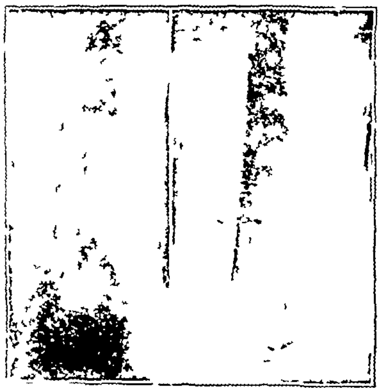
Fig 16 (Case 23) —March 28 1914 Anterior (*a*) and lateral (*b*) views

March 22 (seventeen days later) there was no shortening (Fig 20)

April 3 (twenty-nine days after operation), a cast was applied with Hackenbruch distraction clamps incorporated in the plaster, ample fenestrae were left around the projecting nail ends

April 7 (thirty-three days after operation) the cast was divided opposite to the point of fracture and the halves were distracted by the Hackenbruch turnbuckles until the nail remained immovable when traction was relaxed (for there was still no union in spite of a good callus)

April 9 Figure 21 shows the distracted halves of the plaster cast maintaining reduction of the fragments

April 28 (fifty four days after operation) the cast was removed, there was a large callus and union was good in a satisfactory position (Fig 22)

May 11 the patient was sent home in an ambulant splint There was no shortening or angulation

For over eight weeks after this the patient failed to report at the hospital in spite of repeated requests and notices Finally under threat of coercion by the Gerry society, the boy's parents brought him for inspection, July 8 There was considerable angulation with consequent shortening (Fig 23) Operative correction of the deformity was flatly refused The child was accordingly sent to an orthopedic hospital in the country to insure his being under constant competent supervision Here he remained under the care of Dr C L Wallace for six months

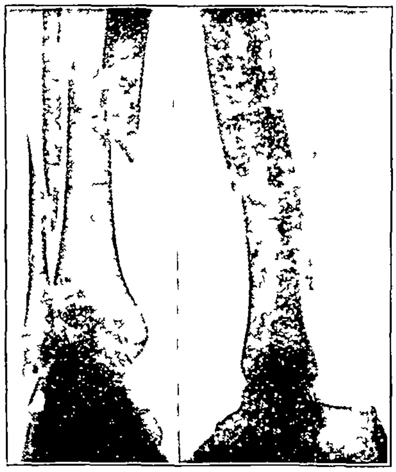

Fig 17 (Case 25)—Feb 21 1914 Fracture of both bones of the leg anterior (*a*) and lateral (*b*) views

A roentgenogram taken ten months after operation (Jan 21, 1916) shows sound bony union with no increase in deformity (Fig 24)

June 5, 1916, one and one quarter years after operation, there was good function (no limp), some deformity and one-half inch shortening (Fig 25) Needless to say, had he remained under constant supervision (as instructed), angulation could in all probability have been avoided

Objections which have been raised against the method are

1 *Pain*—If the skin of the thigh is pulled upward while the nail is being inserted, there should be no pain after the nail is once in place, firmly embedded in the bone On the other hand, if the skin is not pulled upward during the insertion, later when traction is applied, the nail presses against the skin just below it, there is constant pain, and a decubitus results

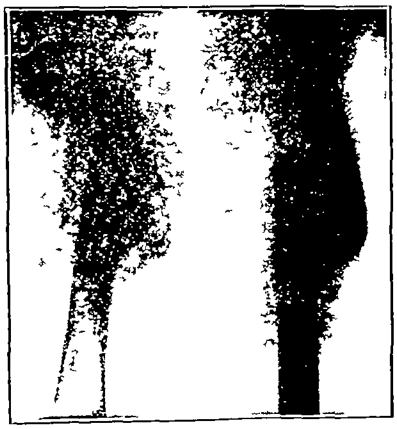

Fig 19 (Case 29)—Malunion of right femur four months after fracture anterior (*a*) and lateral (*b*) views 2¼ inches shortening

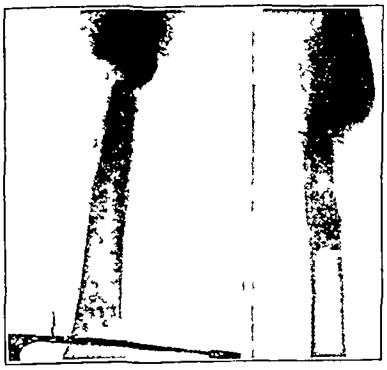

Fig 20 (Case 29)—March 22 1915 after seventeen days of nail extension following osteotomy reestablishing the fracture

2 *Infection*—The danger of infection is nil, provided (*a*) the strictest asepsis is observed, and (*b*) Steinmann's precepts regarding sites of insertion are followed These are (*a*) avoidance of the hematoma around the fracture[3], (*b*) avoidance of the marrow cavity, (*c*) avoidance of the joint cavity, and (*d*) avoidance of the epiphyseal line According to these tenets, therefore, in fractures above the lower third of the femur, the nail is inserted at a point 1 finger's breadth above the upper margins of the condyles just behind the middle line of the bone (Figs 4, 7, 11 and 20) In fractures of the lower third, the site of insertion is a point on the tibia 2½ fingers' breadths below the upper margin of the tibia on a level with the lower margin of the head of the fibula (Fig 1) In fractures of both bones of the leg in its upper half, the nail transfixes the tibia 2 fingers' breadths above the ankle joint, or 3 fingers' breadths above the malleoli Lastly, in fractures of both bones just above the ankle, the nail point perforates the calcaneus 1½ fingers' breadths below and behind the malleoli (Fig 18)

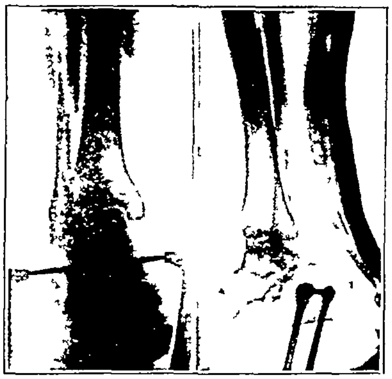

Fig 18 (Case 25)—March 5 1914 Anterior (*a*) and lateral (*b*) views Note location of nail in calcaneus

The few infections which I have observed have followed either lack of asepsis, or attempts to improve on the original method Steinmann uses a sharp-pointed nail which is driven through skin, subcutaneous soft parts and bone, and is then left in situ In the forepart of his book, written in 1912, Steinmann[4] expressly condemns incision of the soft parts so as to expose the bone, he also deprecates drilling a hole first and later inserting the nail into it In spite of his warnings that such unnecessary procedures increase the chances of infection, and, indeed, have been followed by local infections, certain surgeons in this country have repeated the errors of their European colleagues and, I understand, their patients have suffered from bone sinuses in consequence I therefore advise any prospective inventor to peruse the beginning of Steinmann's monograph, not only for the purpose of discovering the various modifications which have already been devised, but also to learn the defects of these questionable improvements

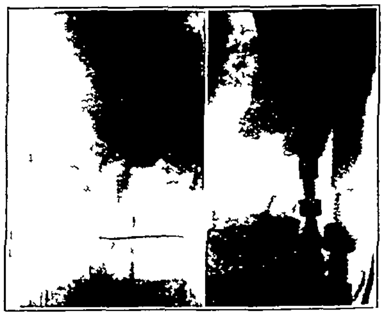

Fig 21 (Case 29)—April 9 thirty five days after operation Delayed union reduction of fragments maintained by distracting halves of plaster cast with Hackenbruch s turnbuckles (the cast was cut across at the level of the fracture) Anterior (*a*) and lateral (*b*) views

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[3] The only deaths attributable to the nail extension have followed infection of the fracture hematoma from the improperly placed nail tract passing through it (Steinmann)

[4] Steinmann Nagelextension der Knochenbruche, Neue deutsch Chir 1912 i (Steinmann is an assistant of Kocher s in Berne)

In my own series (thirty cases) the nail holes through tibia or calcaneus were as dry on the day of removal as when they were made The same was true of most of the femur cases, in quite a number of the remainder a drop or two of pus was present around the nail at the time of withdrawal, there had been no fever previously, there was no inflammation of adjacent soft parts at the time and the holes healed completely under the customary wet dressings in a week or ten days

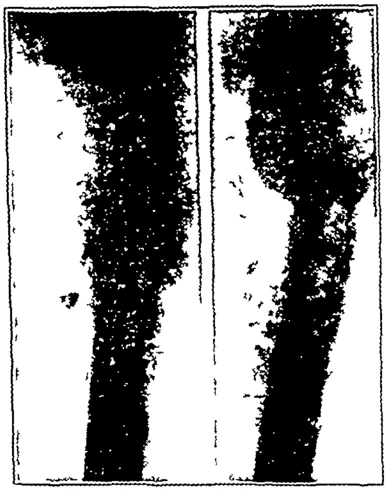
Fig 22 (Case 29) —April 28, fifty four days after operation No shortening no angulation a massive callus Anterior (*a*) and lateral (*b*) views Patient was sent home shortly after (May 11) in an ambulant hip splint

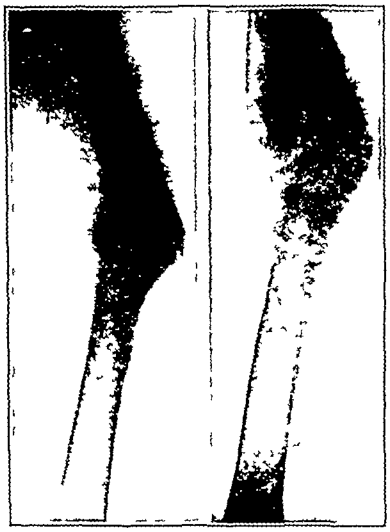
Fig 23 (Case 29) —July 8 1916 one hundred and twenty fifth day after operation Patient had absented himself from the clinic for more than eight weeks in spite of repeated instructions to report for observation and control Both anterior (*a*) and lateral (*b*) bowing had taken place The parents refused permission for any operative attempts at correction but consented to a prolonged stay in a convalescent orthopedic hospital in the country

The only case of my personal series with infection resulting in prolonged suppuration and a persistent bone sinus followed displacement of occluding dressings There was perfect function of knee and no shortening

I have never seen an infection follow the withdrawal of the iodin-painted nail point through the nail tract, and lay no stress on the theoretical objections raised about this procedure The metal of the nail and the adjacent skin must be thoroughly cleansed of crusts or dried collodion, and well impregnated with iodin before extraction Afterward tincture of iodin is injected into the nail tract from both sides, and an aseptic wet dressing is applied This is changed daily under the strictest asepsis until the holes are filled with granulation tissue, then they are covered with a mercurial ointment dressing until healing is completed

Lastly, I do *not* advocate nail extension as a routine method of treating fractures However, there can be no question about its being a most valuable addition to the older, well recognized procedures

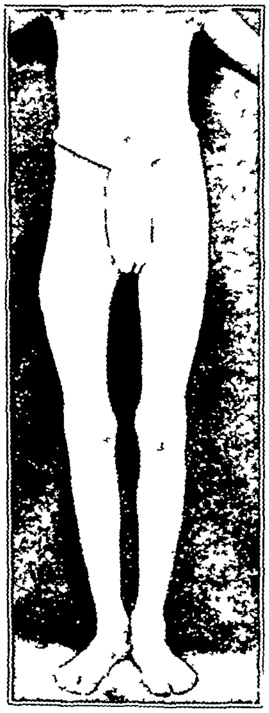
Fig 25 (Case 29) —June 1 1916 Good function moderate angular deformity one half inch shortening

CONCLUSIONS

1 Nail extension is a safe measure, provided the proper technic is employed

2 Because of its small site of attachment, it is of great value in recent simple fractures with extensive abrasions, *in recent compound fractures with much* destruction of soft parts, and in multiple fractures of the same limb

3 Because of its efficient traction, in conjunction with osteotomy, it is the only method whereby the shortening present in certain old malunions can be safely overcome even months after the original fracture

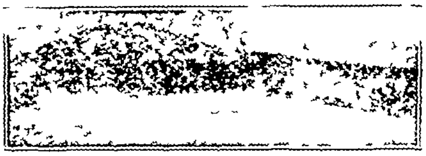
Fig 24 (Case 29) —Jan 21 1916 Anterior view six months later, firm bony union, one half inch shortening

4 In relation to open operative reduction, it may be stated that *in certain cases nail* extension will obviate the necessity for operative intervention, and in other cases it can be employed to prevent shortening until the suitable time for plating has arrived

34 East Seventy-Fifth Street

Industrial Poisons—The mode of entrance into the system of an industrial poison differs with the character of the poison as well as the form in which it appears, i e, whether as a dust or gas or fume Some poisons are absorbed through the unbroken skin, most of them are absorbed through the digestive organs either by swallowing the poisonous dust or by getting the poisonous dust and particles through food contaminated with poisonous materials and dust Others affect the organism by inhalation of the gases and fumes According to Teleky, Kurschmann and other German scientists, lead is never absorbed through the unbroken skin On the other hand, it has been shown that certain drugs applied to the skin produced the effect of these poisons This is especially the case with mercury and other drugs The mode of entrance may differ not only according to each poisonous element, but also according to the individual susceptibility of the worker The season of the year is also said to have an influence on the effect of lead, and lead poisoning is said to be more serious in winter than in summer Professor Thompson quotes Laureck, who claims that 71 per cent of cases arise in winter and 29 per cent in summer in Austria On the other hand, he cites several French authors who claim that in France lead poisoning is twice as common in summer as in the other seasons The claim is also made that chewing tobacco leads to lead poisoning because of its liability to be contaminated with lead—George M Price, M D The Modern Factory, 1914

NAILS AND SCREWS THROUGH JOINT SURFACES, IN AUTOGRAFTS AND IN FRACTURES INTO JOINTS *

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MINNEAPOLIS

Last year, before the Western Surgical Association, I reported a series of experiments to determine the response of the tissues of the joints to nails and screws inserted through the joint surfaces The present series was undertaken to find out what this response would be in the presence of autografts in the joints and of fractures into the joints

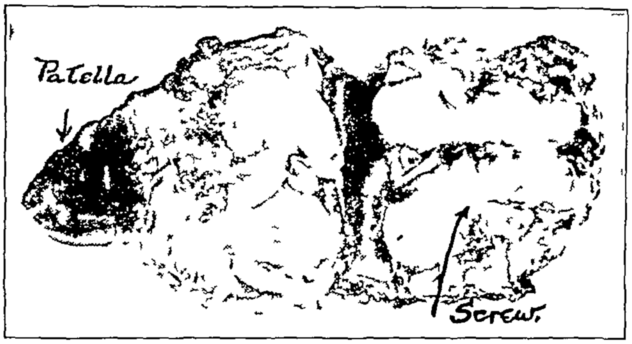

Fig 1 —Fracture screw projected slightly three months five days after operation condyle built up screw covered Patellar groove lined with cartilage

Various degrees of detachment of the fragments, from partial separation and separation from all but one crucial ligament, to the free autograft were used The results were uniformly successful in all cases in which the pieces of bone were fastened firmly, and in all cases in which they were fixed in a faulty position and not quite securely Only one case failed to show an apparently perfect result, with free, smooth motion of the knees, with the dogs running and jumping about so well that they had to be caught and the legs examined before one could tell which leg had been operated on This dog was one of the autograft cases in which the graft had been fastened with a small, round brad, so loosely that the condyle could be moved rather easily in a swivel arc about the brad It was not able to catch up its new blood supply and the entire graft of the condyle of the femur was absorbed, as was also some of the opposing surface of the tibia which had not been touched by the operation These irregular surfaces were already covered over with connective tissue which looked like cartilage, at the end of two months, the time of the experiment

In all, twelve dogs were used No joint in this series or in the series reported last year showed infection, though the simple iodin sterilization and no dressings was used in all The time varied from one month and thirteen days to three months and five days from operation to the recovery of the specimens The fixation of the fragments varied from firm to loose, and they were set in positions varying from accurate to one of moderate displacement The nails and screws were set at different levels, some projecting, some flush with the cartilage, and some buried

The results were surprisingly good All fragments, except the loose one spoken of above, were firmly united to the femurs The autografts were united with a callus as firm and thin as were the ordinary fractures, and the grafts themselves apparently remained as living pieces, of full size, and covered with their normal cartilage The microscopic sections, however, show that their trabeculae are being replaced cell by cell by new bone growing inward from their vascular margins, and that the cartilage continues to live The nails and screws in the autografts were covered, or nearly covered, with new connective tissue looking like cartilage This was true, also, in the partially detached fracture cases In the latter specimens some of the nails and screws had been left projecting above the surface somewhat, and, in these, the groove which they had cut in the patella was covered with new cartilage

A remarkable tendency was shown in the condyle, in these cases, to grow until the surface tended to equal or to exceed the level of the projecting nail or screw and thus to prevent any further injury to the joints At the same time the opposing groove shows a tendency to build up somewhat, though not to the normal level

REPORT OF EXPERIMENTS

Experiment 1 (906) —Right knee, three months, five days after operation (Figs 1 and 2) Knee opened inside, after a fracture had been made with a chisel, through a separate linear incision at or near epiphyseal line Considerable amount of hemorrhage was found in the joint from the fracture

A 1¼ inch screw was used through inner condyle into shaft of femur, the external half of which projected just above the cartilage surface and its posterior edge was a short half millimeter above cartilage surface The internal half of screw was sunk very slightly below surface level, joint was freely swung before suturing to cut the groove in the patella, and three layers of interrupted linen were used

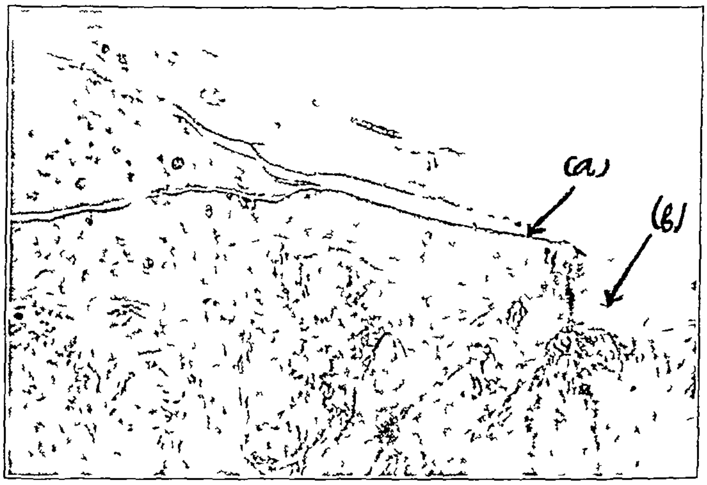

Fig 2 —Patellar groove lined with cartilage (*a*) and filling up with bone (*b*)

The specimen (Fig 1) shows firm union with a little excess of callus condyle built up over the level of the screw head, screw covered, fibrous band of adhesions from tissue over screw head to synovial sheath just below patella, no signs of the blood left in the joint

Broad groove on patellar surface, scratched by screw head, is fairly smooth with a lining of cartilage Cartilage surface on femur is remodeled somewhat to fit the new contour of the patellar surface, apparently largely by upbuilding

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* Because of lack of space this article is abbreviated in The Journal The complete article appears in the Transactions of the Section and in the author s reprints

* Read before the Section on Surgery General and Abdominal at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

Transverse section, Figure 2, through the groove on the patellar surface shows cartilage even in the thinnest portions with new bone building up into it, continuous with the bone below, and, in spots, almost to the outer surface of the cartilage, that is, the groove is building up as the screw head is withdrawn from contact by the building up of the condyle

Experiment 2 (908) —Left knee three months, four days after operation (Figs 3, 4 and 5) Left hind leg broken at or near epiphyseal line by a chisel, same as in Experiment 1, except the fracture was more free, and apparently left attached only to small amount of periosteum It was freely movable in all directions

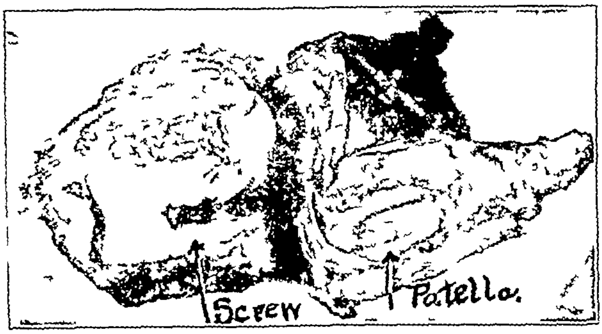

Fig 3 —Fracture screw projected 0 8 mm three months four days after operation condyle built up, screw covered except slight streak at one edge patellar groove lined with cartilage

A 1½ inch screw was used through the surface under the patella buried at its lower edge 2 mm into the bone On its anterior edge it projected about 0 8 mm but before it was quite sunk to this level the joint was freely moved so that the screw head cut a groove in the patella These fragments of bone and cartilage were largely left in the joint The screw held the fracture fairly well in place, it allowed a fair amount of rotary motion judged not sufficient to spoil the experiment, a second screw was not inserted, because of the relative size of screw now in joint

Joint filled with hemorrhage from fracture Wounds sutured as before in three layers over joint, two over site of fracture Linen used

The specimen (Fig 3) shows firm union in slight displacement, no signs of the bone chips remain, no signs of the blood left in the joint

Growth of the condyle has raised the surface to the level of the screw margin, screw head almost entirely covered with connective tissue looking like cartilage, all except a slight streak at the edge

Patellar surface broad smooth groove cut by screw head fairly evenly lined with cartilage

Transverse section through patellar groove (Fig 4) shows bone growing upward into the cartilage and in many places farther along it has come to the surface in its endeavor to fill up the groove as the screw head was withdrawn by the building up of the condyle

Transverse section through the tissue covering the screw (Fig 5) shows connective tissue, a reversion of the cartilage to connective tissue over connective tissue derived from the bone spaces

Experiment 3 (911) —Left knee two months fifteen days after operation (Fig 6) Knee fractured with chisels through longitudinal incision The line of fracture went through upper surface of articular cartilage over which the patella moves fragment was made free from all periosteum though still attached to some of the ligamentous tissues throughout part of its circumference Joint opened along inside of patella which was dislocated outward fragment fastened into place with two furniture nails the inner one buried 2 mm at shallowest point 3 mm at lower edge on account of oblique surface of joint The other nail was buried 1 5 mm at lower edge and about flush with cartilage surface at upper edge Joint closed with three layers of linen There was a considerable amount of blood left in the joint

Specimen (Fig 6) shows firm union with slight displacement, noticeable only at the cartilage line, slight growth of connective tissue fastened to the cartilage at this line

Anterior nail covered with connective tissue and nearly smooth, posterior nail, nearly covered with connective tissue, condyle has built up somewhat so that the edge of the outer nail is now below its surface

Patellar groove is lined with cartilage but shows that the nail opposite used to project somewhat

Section transversely through the groove on the patella (Fig 6) shows cartilage growing, with bone formation beneath to lessen the groove

Experiment 4 (913) —Left knee, two months, six days after operation (Fig 7) Left knee opened as before Fracture made ⅝ inch lower than upper edge of the articular surface with a flap of cartilage and bone, averaging 1 to 3 mm in thickness and on the surface of a full ¼ inch, loosened from surface of fragment, the lower fragment entirely separated from periosteum, but attached to soft parts throughout part of its circumference This was fastened by two furniture nails driven through the surface under the patella but not quite in perfect line, the outer nail very slightly below the joint surface The inner nail projects 1 mm above the joint surface

Three layers of sutures, moderate amount of blood in joint Joint moved up and down to make necessary groove on the patella to correspond with the projection of the inside nail

Specimen (Fig 7) shows firm union, partial absorption of the small flapping fragment, condyle apparently slightly built up to decrease the elevation of the nail and its surface changed to accommodate itself to the changed groove scratched in the patella Patellar groove not yet covered with cartilage Otherwise joint surface smooth

Transverse section through patellar groove shows bone growing so rapidly to fill up the groove that there is almost no cartilage over it

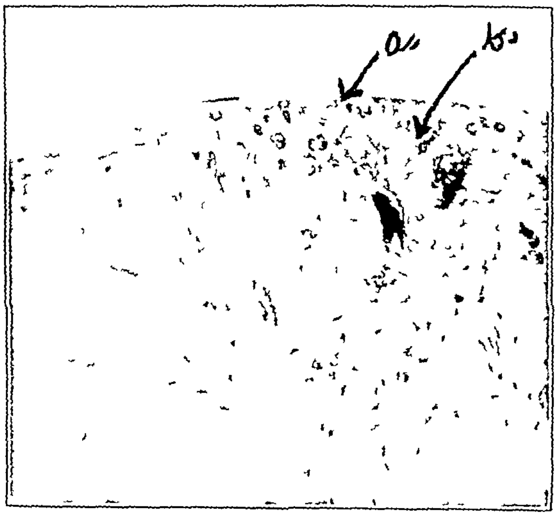

Fig 4 —Patellar groove lined with cartilage (*a*) and filling in with bone (*b*)

Experiment 5 (916) —Left knee two months one day after operation (Fig 8) Left knee opened as before, fracture a little over ½ inch below edge of cartilage, periosteum completely severed Two nails were inserted, the inner nail head buried well into the bone under cartilage surface 3 mm deep, the outer nail head buried 2 mm Fragment rotated inward before fastening

Suture, three tiers, sutured as before Considerable blood was left in the joint

Specimen (Fig 8) shows firm union in its new position Nails completely covered with connective tissue nearly smooth, opposing surface smooth, no signs of the blood left in the joint

Experiment 6 (924) —Left knee, two months, twenty days after operation (Figs 9 and 10) Incision over internal aspect of left knee anteriorly, internal condyle fractured with a chisel and entirely loosened from surrounding tissue, so that it was held only by one crucial ligament alone for its blood supply This was rotated outside of the joint to make sure, on returning to place, there was a persistent tendency toward internal rotation of the posterior portion, so that it was difficult to place it in correct position, though this could be done

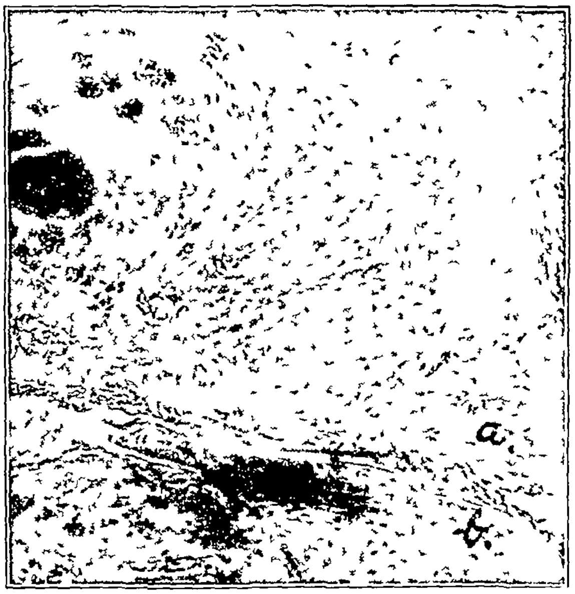

Fig 5 —Tissue covering screw a reversion of cartilage to hyaline cartilage and then to connective tissue (*a*) overlaying connective tissue derived from the spaces between trabeculae (*b*)

The fragment was fastened by one furniture nail through articular surface slightly above the cartilage, with moderate tipping of the whole fragment, so that the lower surface was bent farther from the middle line of joint than normal, this apparently held fragment fairly firm in position The cartilage surface which had been cut across was matched at the inner anterior margin, but the twist left the outer anterior margin (mesially) projecting about 2 mm above corresponding cartilage of upper fragment and at a distance of 1 mm from it The nail head was left just above cartilage level posteriorly, but only very slightly

The joint was sutured in three layers interrupted linen sutures, moderate amount of blood left in joint

Specimen (Fig 9) shows firm union in its new position of slight rotation with a fine line showing in the cartilage The projecting edge of the fragment under the patella is smoothed down to fit the patellar surface, but is covered with cartilage

The nail is completely covered with a thin layer of connective tissue, nearly smooth

Transverse section through condyle and line of union shows the line of union complete, but cartilage edge of the union shows fibrocartilage

The fragment (Fig 10) has behaved like an autograft, and shows microscopic replacement of the bone trabeculae taking place at all margins Bone cells in the centers of the trabeculae are gone, the cell spaces empty This is a little more noticeable as the distance increases from the line of union This corresponds with the microscopic regeneration of the autografts The circulation through the crucial ligament has been insufficient to keep the fragment living

The articular cartilage has kept its vitality and has undergone no apparent change, except that in some places, and to a moderate degree, it seems to contribute to the microscopic replacement of new bone in some of the trabeculae nearby

There is the tendency toward the formation of fibrocartilage in a vertical arrangement at the line of union The bone of the line of union is nearly indistinguishable from that of the bone of the shaft near it

Experiment 7 (926) —Left knee, autograft of condyle, two months, one day after operation (Figs 11 and 12 *d*) Left knee was opened as usual, external condyle chiseled free from bone and separated from crucial ligament and all the soft tissue, and finally removed from the joint to be sure that it was a free autograft, then fastened into place by two furniture nails, so that the upper edge of each nail is buried 1 mm , the lower edge 2 5 to 3 mm , below the cartilage surface Apposition at line of fracture good, but condyle slightly rotated, fair amount of blood in joint Joint sutured in three layers as before, linen sutures

Autograft (Fig 11) shows perfect union in its new position of slight rotation, apparent living of entire autograft, cartilage surface smooth and normal, no atrophy of condyle, nails covered, crucial ligament not united

The *roentgenogram* (Fig 12 *d*) shows autograft, nails and line of union

Transverse section (Fig 13) shows microscopic growth of new bone replacing the bone trabeculae in the autograft taking place at practically all margins from the vascular spaces inward Bone cells in the centers of the trabeculae are gone and the cell spaces are empty The general contour of the trabeculae are preserved by the new growth There is no open space between the new and the old

The articular cartilage remains practically unchanged, except that in places it seems to contribute to a small degree to the replacement of new bone in some of the adjoining trabeculae At the line of union there is a tendency toward fibrocartilage with a vertical arrangement

Experiment 8 (928) —Left knee, autograft, two months four days from operation (Figs 14 and 12 *a*) Left joint opened as before, two holes drilled before internal condyle was broken off with a chisel, and removed from joint after separating the crucial ligament (that is, a free graft) The fragment was replaced, two furniture nails driven so that the edges toward median line of knee were very slightly below cartilage level, though almost of the level, the outer edge deeper

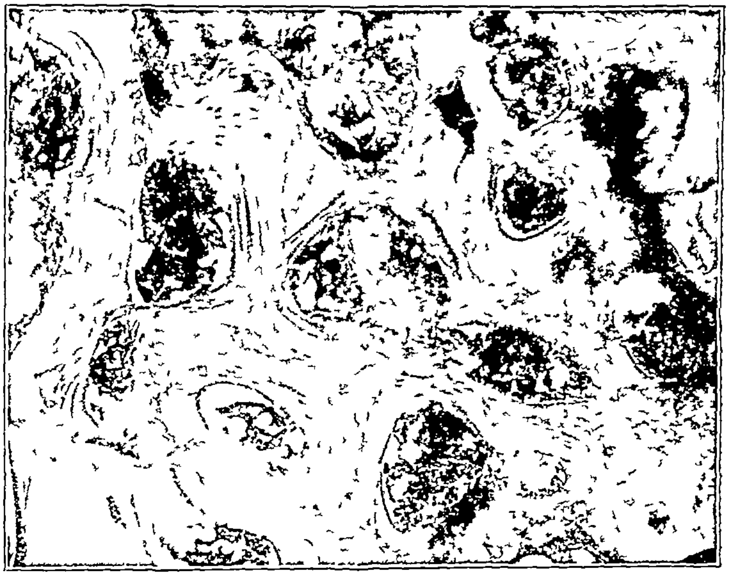

Fig 10 —Transverse section through fragment high power condyle has united like an autograft with microscopic replacement of bone

Joint full of blood when sutured in the usual way Position of fragment almost exactly normal

Autograft (Fig 14) shows perfect union, so smooth that a faint line can just be made out on the cartilage, entire graft apparently has lived

Anterior nail covered, posterior nail nearly covered, all but one edge, no evidence of the old blood in the joint, cartilage on the opposing tibial surface nearly smooth, not quite, semilunars normal, crucial ligament not united

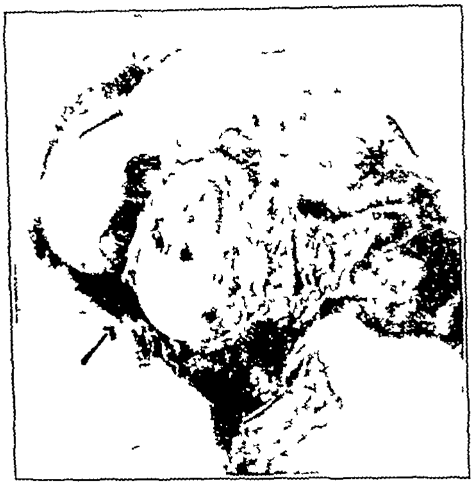

Fig 11 —Free autograft of condyle, two nails two months, one day after operation perfect union, no atrophy of condyle crucial ligament not united

The roentgenogram (Fig 12 *a*) shows autograft, nails, and line of union

Transverse section through autograft and line of union (Fig 15) shows the microscopic replacement of the bone trabeculae in the autograft from the vascular spaces at practically all margins, with the bone cells in the centers gone and the spaces empty, the general contours of the trabeculae preserved, almost no distinction between the trabeculae in the line of union and the living bone attached to the shaft, the articular cartilage practically unchanged except that it contributes somewhat to the new bone formation At the line of union there is a change toward fibrocartilage with a tendency toward vertical arrangement

Experiment 9 (933) —Left knee, autograft, empty drill hole two months, seven days from operation (Figs 16 12 *c* and 17) Incision into left knee as before, drill hole with countersinking for screw, a second drill hole was made anteriorly with the countersinking and left open, fracture of internal condyle, which was removed from joint to be sure that it was a free graft, screw inserted after replacing the fragment Line of union excellent, a small partially detached fragment was left on posterior portion of bone graft, joint sutured as before

The screw head was just above level with the cartilage surface toward middle of joint, it cleared about 2 mm at opposite edge.

Autograft (Fig 16) shows perfect union, no atrophy, cartilage smooth, entire graft apparently has lived, the loose tag of the fragment has also smoothly healed in place, screw, outer portion more than half covered with new tissue

Opposing joint surfaces are smooth and normal except a slight loss of the semilunar surface now healed over The empty hole is entirely filled with new tissue

The roentgenogram (Fig 12 *c*) shows autograft, screw and line of union

Section (Fig 17) is through autograft and line of union, and includes the filled hole This shows the microscopic replacement of the trabeculae in the autograft as in the preceding specimens and the same unchanged condition of the cartilage with its moderate contribution to the new bone formation and its tendency toward fibrocartilage in vertical arrangement at the line of fracture

The hole has been filled apparently by growth from the living bone below, very little from the bone and cartilage in the autograft It is covered with connective tissue, the upper layer from hyaline cartilage changed through fibrocartilage to connective tissue, the lower layers from the connective tissue growing out from the vascular bone spaces

Experiment 10 (935) —Left knee, autograft, filled hole, two months after operation (Figs 18 and 19) Left knee joint was opened as usual, two holes drilled and the internal condyle chiseled off and separated from all soft tissue, including the crucial ligament, removed from the joint and replaced The joint was small, there was considerable difficulty in getting the fragment perfectly true, a screw hole with countersunk margin was left open, a second opening for a nail made and a small brad inserted, fragment in excellent position and apparently stayed in place moderately on manipulation, but easily moves in a swivel arc about the brad Head of nail sunk well below surface of cartilage Joint full of blood when closed

The specimen (Fig 18) shows that the loose autograft has entirely disappeared The surface left is pitted and irregular Evidently there has been a definite osteoclasis sinking it below its original level Two small spicules project from its surface These and the remaining surface are covered with connective tissue which looks like cartilage The opposing tibial surface is likewise partly absorbed and pitted, but covered with modified cartilage Part of the semilunar cartilage on the opposing surface of the tibia is absorbed, leaving only fragmentary portions still in place A small area on the other condyle also shows irregular absorption, but here the semilunar cartilage is intact

The patellar surface shows some absorption with fairly smooth upbuilding of modified cartilage of a slightly changed color

Section through the irregular surface of the femoral condyle shows some microscopic destruction with osteoclasts and Howship's lacunae, with here and there some new bone growth This area is covered with connective tissue, derived in part from the cartilage by reversion through fibrocartilage to connective tissue and in part from the connective tissue of the bone spaces

Figure 19 shows the cartilage changing toward new bone in one direction and toward connective tissue in the other

The section through the tibial surface shows similar changes, though the osteoclasts here seem to be mostly single cells, while in the femur there are more which suggest the multinuclear type, and the connective tissue covering is thinner in places and in spots the surface is bare

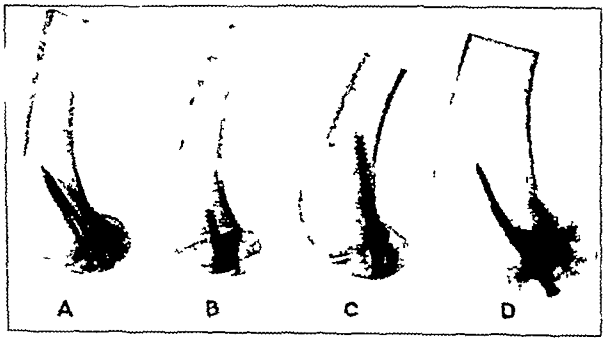

Fig 12 —*a* autograft nails and line of union, *b* fracture screw and line of union *c* autograft screw and line of union *d* autograft, nails and line of union

Experiment 11 (937) —Left knee, one crucial ligament attachment empty drill hole, one month thirteen days after operation (Fig 20) Left knee joint entered as before, two screw holes with countersinking for the screw heads, lower hole left open anterior one used for screw, after separation of internal condyle from all tissue, except the crucial ligament, which was left attached One screw holds the condyle firmly, but in a position of moderate rotation, inward, of the posterior portion (that is, away from joint center), leaving a wedge-shaped fissure on the joint surface beneath the patella Joint sutured as before, three layers

The screw head lies nearly flush with cartilage of joint, in its upper and inner half, buried 3 mm in its outer edge (that is, away from joint center) just below the transverse line of screw head Joint fairly full of blood when closed

Specimen (Fig 20) shows the fragment united like a free autograft There is firm union in the position it was fastened, that is, in slight rotation, fracture line still moderately irregular, cartilage smooth, no absorption of condyle, screw head over half covered with new tissue, no overbuilding of the condyle as the anterior edge of the screw is still about flush with the cartilage surface

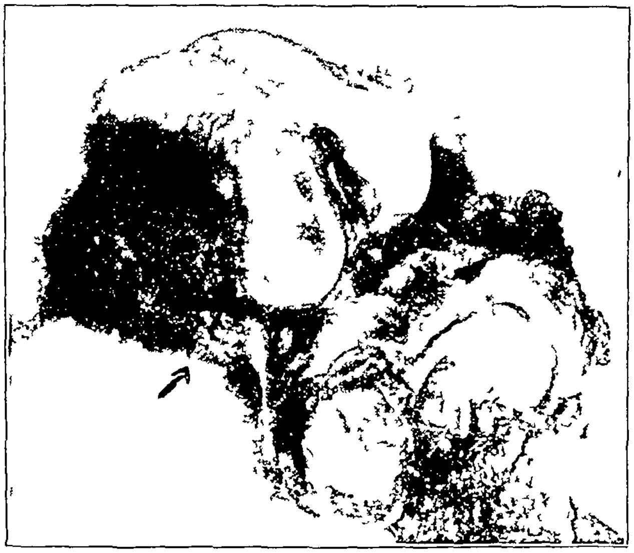

Fig 14—Free autograft of condyle two nails two months four days after operation perfect union anterior nail covered posterior nail nearly so crucial ligament not united

Semilunar cartilage opposite the screw on the anterior edge shows some fibrillation and a moderate loss of surface where the screw evidently rubbed it

The empty screw hole is filled though not quite smooth, and is apparently covered with the same sort of tissue as the screw head There is no evidence of the blood left in the joint

Section of the condyle, the line of union and the filled hole show the same microscopic replacement of the trabeculae The circulation through the crucial ligament is so minute that, with this attachment alone the condyle unites like a free autograft The hole has been filled largely by bone from the shaft fragment from below, with very little from the detached condyle, and the covering is connective tissue, a reversion of the hyaline cartilage to the connective tissue type over connective tissue growing from the vascular spaces

Experiment 12 (942)—Left knee, one month, twenty-five days from operation (Figs 21 and 12 *b*) Left knee opened as before, chisel fracture, both condyles in one piece, about 1 inch back of anterior edge of cartilage, *one ordinary drill* hole ¼ inch deep anteriorly, not entirely through the fragment on internal condyle, was left empty, as a blind pocket, one ¾ inch screw used to fasten fragment in place

Fragment came into good position, except a separation of nearly 2 mm along the inner line of fracture, where chisel had been inserted, a distance of about ¾ inch in length, approximation along cartilage under patella quite good Joint full of blood when sewed with three layers of sutures in the usual way

Specimen (Fig 21) shows firm union with a fine line, empty hole filled, screw three quarters covered over with connective tissue

The roentgenogram (Fig 12 *b*) shows fragment, screw and line of union

Section (Fig 21) through filled hole, condyle and line of union shows that the trabeculae in the condyle have lived, new trabeculae in the line of union formed from both fragments The *small empty hole* has filled with bone, largely from the loose fragment, which is almost indistinguishable from the surrounding bone, and because small, is covered with cartilage, nearly all of it fibrocartilage running vertically

REPORT OF CASES

To this series of animal experiments I wish to add two cases in the human being, one in an elbow and one in a knee The elbow was reported with my previous series

Case 1—A fractured and misplaced fragment of the external condyle of the humerus in a boy of 7, persistently resisted all the usual methods of replacement, and six weeks after the fracture the fragment stood out from the joint with a rotation of nearly a half circle The slight attachment to a small strip of the external lateral ligament suggests the experiments in which a condyle of the knee was loosened from all attachment but the crucial ligament, and which united to the shaft like a free autograft The slight attachment apparently was sufficient to prevent its gross absorption, but *no callus was found* six weeks after the injury, at the time I saw the case, opened the elbow and nailed the fragment with two small furniture nails through the joint cartilage The joint was held in acute angle flexion at first, and, later, a few connective tissue adhesions were broken up under ether This loosened the fragment somewhat, but the final result was a good serviceable joint with moderate limitation of motion at the extremes of motion

Case 2—This was a free autograft of the external condyle of the knee in a Syrian girl, aged 13, who had been knocked down by a motorcycle and run over from her feet upward This resulted in crushing of the left foot, a fracture of both bones of the right leg, a compound fracture of the pelvis through the vagina, and a badly displaced T fracture into the left knee joint (Fig 22) The crushing of the foot resulted in a necrosis of the little toe and most of its metatarsal, the fracture of both bones of the leg and the compound fracture of the pelvis healed nicely

The girl was in marked shock When this wore away she was given ether, and an attempt was made to set the T fracture into the knee The roentgenogram, later, showed the fragments as badly out of place as before Then in an open operation, the inner condyle was replaced and fastened with a Lane plate Through a second incision the external condyle was felt to be loose and finally rolled out into my hand, a free autograft

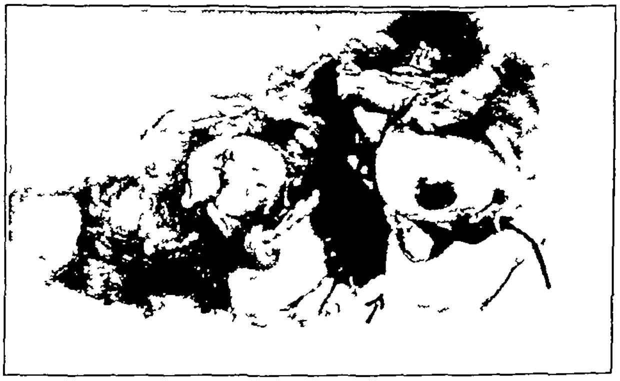

Fig 16—Free autograft of condyle screw projected drill hole left empty two months seven days after operation perfect union, no atrophy screw more than half covered empty hole almost entirely filled

This made a tight fit in its natural position after a few jagged edges toward the shaft side had been trimmed with bone forceps The soft parts sewed over it fastened it so securely into place that no nails or screws were used Owing to the original crushing of the soft parts and possibly to some dried scabs, there was a streptococcus infection in the wound over this fragment which extended well up the thigh and gave temperatures over 103 which after a number of days slowly subsided The discharge lessened but did not stop

One month after the operation I determined to find out what conditions existed, and gave the patient ether, removed the cast, and explored My fingers finally came down on a bare corner of the autograft in the lower branch of the sinus I thought it wise to leave the graft in place, even if it came out later, as I expected it to do, so that if possible there might be some mold of new bone formed about it which might fill in later after the autograft came out On looking the leg over I noticed a pouting sinus over the calf with a grayish slough in its opening I pulled on this, and gradually the whole gastrocnemius muscle came out in one piece

A few days after operation the discharge lessened, and after some time the wounds finally healed, with the graft still in place (Fig 23)

At the end of three months from the first operation the last cast was removed (Fig 24), and the girl is now walking with a movable knee which can be flexed almost up to her thigh The Lane's plate is still in place Although no nails or screws were used to fasten the free condyle into place, I have thought it proper to report the case in connection with this series of experiments which it inspired

The remarkable thing about this case is not only that the free graft of the external condyle lived and gave a useful knee, but that it lived in the presence of an infection of a distinctly violent type and that the Lane's plate is still in place The fissure leading to the plate must have granulated in sufficiently to have closed the plate from the field of the infection

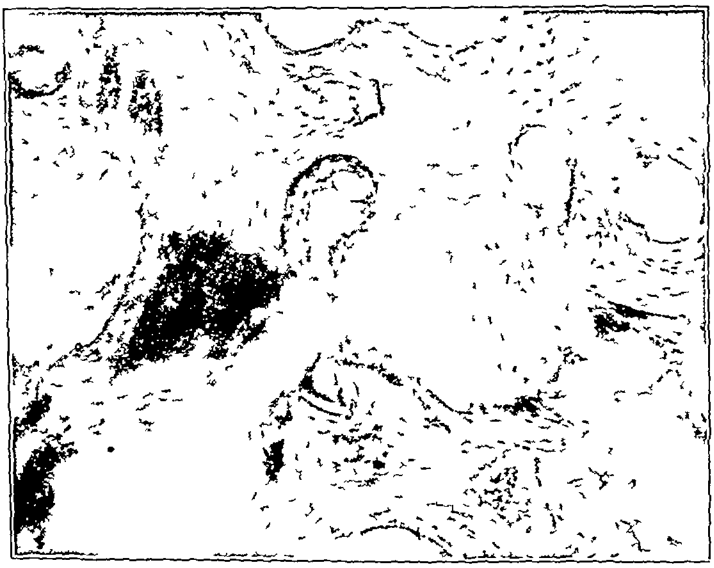

Fig 17—Transverse section through autograft high power microscopic replacement of trabeculae (without the preliminary formation of cartilage and without the intervention of special osteoclasts)

CONCLUSIONS

1 The autografts unite with a line of callus as fine as those of simple fractures, with a free joint, and without adhesions

2 The autografts seem to live, but in reality the bone trabeculae are gradually replaced by microscopic bone growing inward from the vascular spaces between them, while the cartilage continues to live and to a limited extent aids in the formation of the new bone adjacent to it

3 The main replacement of the bone in the trabeculae seems to take place directly from bone cells without the preliminary formation of cartilage, and the dead portions of the trabeculae seem to be absorbed in a line immediately adjacent to the new growing bone without the intervention of special osteoclasts

4 Condyles detached from all tissue save the crucial ligament unite like free autografts

5 Condyles, attached more or less to other tissues as well, continue to live throughout, or nearly so

6 Nails and screws are tolerated in the human being as well as in the experimental cases, and with surprisingly little reaction They remained firmly embedded in every specimen recovered, but the Roentgen ray shows a slight thinning of the bone about them

7 The surface covers with connective tissue, a reversion of the cartilage from hyaline to fibrocartilage and then to connective tissue, which overlays connective tissue derived from the vascular spaces between the trabeculae

8 The response of the condyles to the presence of a rigid body projecting above the joint surface is to build up the condyle in its attempt to withdraw it, and prevent further injury to the opposing joint surface This also takes place when the condyle is an autograft

9 This growth is a true growth of bone, and the cartilage tends to retain its normal thickness

10 The groove cut by a projecting nail or screw, in the opposing surface, covers over with hyaline cartilage, and the groove tends to fill up with bone as the projecting body is withdrawn by the growth of the condyle

11 The line of fracture in the cartilage tends to cover over with cartilage, largely of the fibrocartilage type if it is narrow, with connective tissue if it is wide

12 In autografts, empty drill holes fill with new bone, growing up from below, only to a very limited degree from the bone and cartilage in the graft, in living fragments, from the trabeculae of the fragment, very little from the cartilage The surface covers with the same kinds of connective tissue as do the nails and screws

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS GERSTER AND MANN

Dr Charles E Thomson, Scranton, Pa Fracture of the neck of the femur is very badly treated if, indeed, it is treated at all We complain that the profession has introduced theories that as these patients are mostly old it would be better not to treat them I think that many of our bad results have been brought about by two traditional fallacies, first, that the neck of the femur would not unite as other bones do, and second that the proper thing to do with a fracture any place in the femur was to place the body on an inclined plane and hang a weight some place on the broken limb and call it Buck's extension Buck's extension at best is a misnomer, in practice and principle it is wrong and as generally used it is a farce Since reading my last article before this section I have had upward of a hundred cases treated by Whitman's method and with one single exception I have obtained good functional results

Dr R H Sayre New York Why are these fractures in general treated so badly? It is because the medical profession does not take any interest in them The profession is much more interested in surgery of the abdomen surgery of the thorax sutures of the heart, and odds and ends of that kind instead of common things like fractures It seems to me that with the coming of the Workman's Compensation

Act a great deal more attention will have to be paid to fractures if we expect to escape malpractice suits When the insurance companies have to pay the bills of these people with damaged legs instead of their being treated in hospitals for nothing they will expect a much better result than a great many of them at the present time receive, and as they wander around through eight different medical examiners and hear incidentally the opinions expressed by these eight different medical examiners as to the benefit they have derived from their treatment, they will sometimes become peevish and seek the courts

If it is a fact that we can drive tacks and brads into joints without disturbing their function, it is a wonderful thing to know I am extremely glad to hear that we can treat joints with so much more impunity than I had supposed was possible, and I shall look for these cases with very great interest in the future It would seem to me that that last case of the child with the supracondylar fracture might perhaps have been a good case for the use of a Steinmann needle in the shin as a means of holding the fragments in position

In these cases which are reported by Dr Gerster, some of which I have seen, I think that the Steinman pin has given most excellent results There is no question but that it has a very distinct function in the treatment of fractures where you wish to make traction and hold fragments in position and yet have no suitable skin on which to make traction I believe there are certain cases where it is a distinct aid to our present mode of treatment

Dr H H Albee, New York I, too, was a little astonished that joints would survive metal being driven into them In my own practice I cannot bring any experience to bear on these procedures I have used bone graft pegs It seems to me that it is preferable to put this metal in a position where it can be removed with little difficulty if it ever gave trouble We must consider not only the immediate but the remote danger of infection In reference to fractures of the neck of the femur, I would remove the bone graft from the crest of the tibia with the motor saw We must get as perfect a fit of the graft as possible These pegs can be made of any size and it is that type of peg that I have been using in place of the nails and screws that Dr Mann has mentioned The reasons we do not get union are first, mechanics, second faulty blood supply, third, meager osteogenesis, and fourth the danger of an early callus formation I would not remove the head of the femur until the last ditch has been reached The bone graft fixes equally as well as the nail and it stimulates osteogenesis

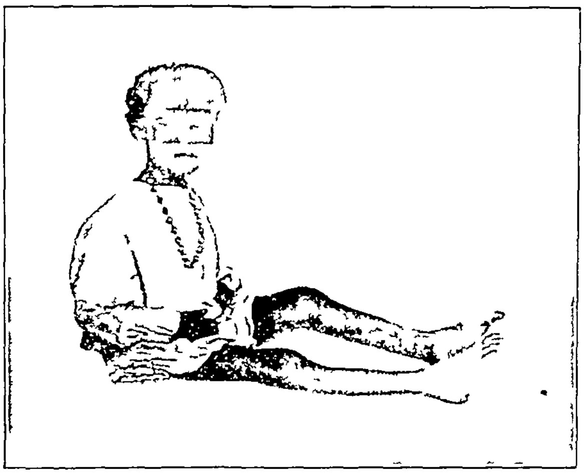

Fig 24 —Cast just removed three months knee movable

Dr James T Watkins, San Francisco The abduction treatment of hip fractures is the application of a surgical principle to a single joint That is, fractures about joints should be put up always in that posture which is the most difficult for that joint in health to assume Extreme abduction is the posture which the hip in health finds most difficult to assume That is the broad underlying principle recognized by orthopedic surgeons, and perhaps we can persuade our surgical friends to adopt this treatment

Epiphyseal separation occurs practically invariably in children from 13 to 15 years of age, and especially in exceedingly fat children When they come to us for examination there is a slight shortening some outward rotation, and they cannot raise the leg to any extent

Dr W R MacAusland, Boston In treating fractures of the long bones or about the neighborhood of joints we should remember that the human body is like a machine that works in certain fixed and irrevocable lines As we see a fracture for the first time our first object should be to return function as soon as possible and to avoid confinement in bed, first, to prevent the atrophy from disuse, second, to enable the patient to regain function early Dr Whitman has outlined the principles and those who follow his advice carefully and faithfully need rarely resort to any operative interference whatsoever In fractures of long bones alignment is most important, more from the orthopedic than the surgical standpoint Limitations of joint motion and deformities all have after-effects which disable and make the patient inefficient Dr Gerster has outlined his method in the use of nail traction My objection to it is the length of time it demands confinement in bed Then comes the question of which way the pendulum is now swinging on the operative treatment of fractures In the last ten years we have seen a distinct wave of operative enthusiasm in these acute fractures We have seen the promiscuous use of bone plating and have seen disastrous results in the hands of many surgeons Conservative treatment of fractures still is a very fertile field Given, for example, 100 cases of fracture in our clinics there is no question that 65 to 80 per cent can be treated and get perfect *functional results* by conservative treatment when followed out properly But only in a certain percentage of cases, about 20 per cent, is operative interference indicated I strongly oppose the use of metal in contact with bone Some time or other it will suppurate What are we going to use in these cases where operative interference is indicated, which is as I said a small percentage? The technic demands careful asepsis, avoidance of handling the skin and approaches to fracture The cavity of the fracture can be sponged out with gauze and dried and the serrations of the fragments fitted together accurately Then put it up in plaster The advantage of this procedure is that there is no metal in contact with bone which will delay union, and the fracture is firmly held in an ambulant splint These cases unite early with very little callus, the fractures healing mainly by internal and not by external callus

Dr Charles A Parker, Chicago I wish to commend the Whitman dressing for fracture of the neck of the femur Two or three points are to be considered that have not been mentioned today One is that there is an interference with abduction by the adductor muscles, so that the trochanter may not hit the upper part of the acetabulum If you take the skeleton and abduct the thigh with the foot rotated outward, you rotate around the axis of the neck of the femur instead of getting true abduction The important part of the whole treatment is to fix the bone in a good plaster cast Rotate the foot inward as far as possible and put a plaster cast over the foot Why does not the doctor follow the Whitman method? Because of the trouble with the plaster cast In regard to the slipping fractures of the fat children I may be entirely mistaken in the cases spoken of but in age and method of development, slowly developing with or without an injury, it is apparently a typical case of coxa vara adolescentium

Dr A B Fitch, Factoryville, Pa A patient of ours tripped on a carpet The fracture was the same as Dr Thomson's and he put it up after his method I see that woman walking on the street almost every day and I think the result is perfect

Dr Leonard F Schmauss, Alexandria, Ind We had many fractures of the neck of the femur at Cook County Hospital, Chicago, we treated them entirely with Liston's splint, which gives excellent results in fracture of the middle and upper part of the femur But I was frequently disgusted when the splint was removed and I saw the subluxation or stiffness of the knee joint In thinking over the matter I came to the conclusion that the cause of the trouble was due to the *method of extension* Take raw adhesive strips, apply them to the limb and secure them with a snug bandage and then apply the weight Where is the traction exerted? Practically seven tenths of it on the limb below the knee The pull is from the limb below and around the knee joint — thus causing subluxation and stiffness — instead of from above directly and mostly on the femur, as it should be After recognizing this principle I left on the facing of the adhesive rubber below the knee and made the straps adhere to the thigh above only, thus preventing undue traction on the knee joint and in that way had no further trouble with subluxation and stiffness If you follow this precaution you will have less occasion to use wire nail extension

Dr A T Mann, Minneapolis This was an experimental study and I think it has brought out some exceedingly interesting things in the ability of the joint to stand more damage than we usually think it can stand, the way the condyle fills up in response to a badly placed nail or screw, and in the way in which the replacements of autografts are made I feel that it would seldom be necessary to place these nails and screws in the joints Sometimes it may be a desirable thing to do I think the experimental study shows some exceedingly interesting points

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A BACILLUS ISOLATED FROM EPILEPTICS

PRELIMINARY REPORT

WILLIAM BARCLAY TERHUNE, M D
Resident Physician East Louisiana Hospital for the Insane
JACKSON, LA

Feeling a deep interest in epilepsy, I undertook a study of individuals classified as epileptics in the East Louisiana Hospital for the Insane It was decided that this investigation should be conducted from every possible angle Accordingly, case histories were reviewed and relatives questioned with a view of discovering the part played by heredity, personal injuries and illnesses, and psychic factors Accurate records were kept giving the number and description of the paroxysms in each patient, nurses were interrogated regarding the habits and disposition of the epileptics in their care, and careful physical as well as mental examinations were made In the beginning of the work it was found that a few patients not diagnosed as epileptics on admission to the institution had developed the typical epileptic convulsions and mental characteristics, while a still fewer number classified as epileptics had later turned out to be something different I mention this only to emphasize that such mistakes in diagnosis are liable to occur, and that it is necessary to rectify them before proceeding to the investigation of the etiology of epilepsy

While I was in the midst of this work, Reed of Cincinnati published a paper definitely asserting that epilepsy was caused by a bacillus which might be isolated from the blood stream, which organism was found in large numbers in the colon of epileptics, and was demonstrable in the retroperitoneal glands

That epilepsy was of toxic origin was not a new idea, in consequence of the labors of Haig, Weber, Ferrani and many others Voison and Bra had both attempted to connect epilepsy with the presence of micro-organisms (streptococci) in the blood, the occurrence of which Besta was unable to confirm

In view of the mass of statistical evidence pointing to the importance of the hereditary influences, and the traumatic factor, as well as the information gleaned from psychanalysis, I could not do otherwise than view with great skepticism the assertion that epilepsy was an infective process Accordingly, the work embodied in this report was performed with the view of substantiating or disproving this assertion, and was begun with the preconceived idea that there was not any such organism as the *Bacillus epilepticus*

MATERIAL AND TECHNIC

There are 130 epileptics in this institution Their histories were carefully reviewed with the idea of selecting those most desirable for investigation from a bacterial standpoint This selection was not found feasible, and in the majority of instances the patient was selected at random When it was reported that an epileptic was having a seizure, a culture was made from his blood regardless of the etiologic factor apparently responsible for his condition

Blood cultures were made by inoculating 100 c c of slightly alkaline bouillon with 2 c c of blood withdrawn from the median basilic vein Two cultures were made each time from the same patient and were lettered A and B A was examined every twenty-four hours B was examined only after A had been declared positive or negative This was done as a check on contamination during frequent examination Cultures were incubated at 37 5 C (99 5 F) They were examined every twenty-four hours for ten days, at the end of which time, if no organism was found, the culture was declared negative

When making smears from the blood cultures to search for the organism, it is well to agitate the flask, thus shaking up the growth, which occurs most abundantly in the bottom of the flask I have found it even better to aspirate a small amount of the sediment from the bottom of the culture with a sterile capillary glass tube In this way I am able to discover the organism much sooner than by any other method

The organisms stain most satisfactorily if carbolfuchsin is applied for one-half minute and then Loeffler's methylene blue for one minute It stains very well, however, by any of the common laboratory methods If it is desired to stain so as to form a marked contrast between the spores and the bacilli, any of the spore stains may be employed

In some instances an inhibiting substance appeared in the blood cultures, and for this reason, after the cultures had been incubated for seventy-two hours, transplants were made on agar slants

Both plain bouillon and dextrose bouillon were used, the mediums were prepared in large quantities and all were sterilizied at the same time and in the same manner Some bouillon from each lot of medium was incubated as a control The glass syringes were sterilized in large lots by dry heat, and one syringe from each lot was rinsed with bouillon and the rinsing incubated as a control In no case was the sterilization found at fault

RESULTS

Cultures were made from twenty-four epileptics during or immediately following seizures A bacillus was isolated from 75 per cent of these The cultures were not found uniformly positive At one time we would get a positive culture following a seizure, while a culture made several days later following an attack might be negative I wish to emphasize this fact In one case the fourth culture was found positive, while three others made from the same patient under similar conditions were negative As it is well known, epileptics frequently have a series of paroxysms, after which they are free of convulsions for varying lengths of time It seems probable that the time the cultures are made in reference to whether the patients are just beginning or are recovering from their convulsive periods is a factor in isolating the organism

Cultures were made from eighteen epileptics in whom no convulsions had occurred for several days All of these were the same patients in whose blood I had found the organism immediately following a seizure In only one case was the bacillus isolated during the intraconvulsive period, and this patient was seriously ill with influenza at the time the culture was made This would lead me to conclude that when one is attempting to isolate the bacilli, cultures must be made during or immediately following the convulsion

Cultures were repeatedly made from forty-two nonepileptics Seven of these were sane, thirty-five were insane, all forms of insanity being represented These were made during the same time that the cultures were made from the epileptics, the same medium and technic was employed, and the insane patients were living under the identical conditions and receiving the same food as were the epileptics None of the controls showed the bacillus found in the epileptics, with one exception In the beginning of the work the organism was found in a patient classified as constitutionally inferior Seven other cultures were made from this patient, and they were all negative At first it was thought that this patient might be a potential epileptic in whom the convulsions had not appeared Later it was decided that a break in technic was responsible for finding the organism in the culture

THE ORGANISM

The organism is a large, gram-negative, spore-bearing bacillus which shows a tendency to form chains The endospore is central in location, elongated in form, and practically fills the entire bacillus when present The spore develops in from forty-eight to seventy-two hours

The organism grows slowly It is not found in a blood culture under seventy-two hours after the culture is made In all cases from three to eight days were required to secure a good growth I believe the time required for the growth to develop is partially responsible for some observers having failed to find the organism I would advise that no culture be considered negative until it had been incubated and observed for two weeks

In bouillon there is a slight pellicle formed, the medium becomes somewhat cloudy, and an abundant, viscid sediment occurs

Transplants made directly from blood cultures on agar slants did not show a growth visible with the naked eye at the end of twenty-four hours In forty-eight hours very small colonies were visible which were round, raised and translucent The growth at this time often resembled water of condensation on the agar As the colonies became older, they assumed a grayish tint The individual colony never became larger than a pinhead The growth was very moist and viscid To obtain a heavy growth it was necessary to incubate from five to seven days As successive transplants were made, it was found that the organism grew more rapidly on artificial mediums than when first isolated The growth was not as satisfactory on Loeffler's blood serum as on agar Litmus milk was slightly acidified Stab cultures were made in agar, and it was found that the organism grew best at the top, but quite an abundant filiform growth occurred along the line of puncture

ANIMAL INOCULATION

Two rabbits were inoculated, saline suspensions from agar slants being given intravenously The first animal received three inoculations at intervals of seven days without showing any symptoms other than an initial rise of temperature following the inoculations, and a gradual loss of weight up to the time it was killed, twenty days after the last inoculation Previous to killing the animal, a culture was made from its heart's blood, from which the bacillus, with which it was inoculated, was isolated At no time was this animal seen to have convulsions The second rabbit was inoculated four times with an interval of three days between the injections Fourteen days after the last inoculation, a blood culture was made, and the bacillus, with which the animal had been inoculated, was isolated At no time did this animal have convulsions

In the belief at this time that rabbits might have a high immunity to this organism, it was decided to resort to cats A large male cat was inoculated with a saline suspension of the organism three times at intervals ot twenty-four hours Three hours after the first inoculation the cat was observed to have a convulsion apparently similar to those occurring in epileptics This convulsion was followed by several others within the next few hours Following the second injection of the organism, the cat had repeated convulsions which did not stop entirely until noon the next day Following the third inoculation, the animal went into a state resembling status epilepticus and was expected to die The number of attacks decreased, however, and after thirty-six hours only one or two convulsions a day were observed Although this animal was remarkably strong and healthy at the beginning of the experiment, eight days after the last inoculation it was too emaciated and weak even to stand alone At this time a culture was made from the heart's blood and the bacillus, with which it had been inoculated, was isolated Three days later convulsions again developed in this animal, during which it died Since then three other cats have been inoculated intravenously with the bacillus, and they have all died during or following convulsive seizures From one of these the organism was isolated after death It was not attempted in the case of the other two animals, owing to the fact that after death they were removed from their cage and buried by a laboratory assistant who was ignorant of the fact that they had been inoculated The number of organisms each animal received was not estimated The growth on an agar slant was emulsified in saline solution and injected into one of the veins of the leg or into the external jugular vein, the latter being large and easily reached

Besides the intravenous inoculations of the organism, three kittens and five adult cats were each fed once a mixture of fresh cream and a bouillon culture of the bacilli All of the kittens and four of the grown animals began having convulsions in from three to five weeks after they were fed the organism, and died during convulsions The other adult cat has passed through a convulsive period twice and now appears quite toxic, but is yet alive All of these animals began to deteriorate physically after being fed the germs, the emaciation being quite marked the tenth day after the organisms were ingested After death, cultures were made from the heart's blood of four of these animals, and the bacillus with which they were fed was removed from two of them

One cat which was neither inoculated nor fed the organism died in convulsions This animal was kept in the same cage with those cats which were fed the bacillus I believe this to be an important occurrence, for it shows that the infection may be transmitted by association, very probably in this instance through fecal contamination

SUMMARY

Although I began this work profoundly biased in my opinion, as I believed that epilepsy was not bacterial in origin, I am forced to the conclusion that the bacillus which I have isolated, which is identical with the *Bacillus epilepticus* described by Reed, must be an etiologic factor in epilepsy, in view of the following facts

A bacillus was isolated from 75 per cent of epileptics examined

It was present during and following a seizure but not during the intraconvulsive period, except in the case of one patient who was debilitated by ill health

It was not found in nonepileptics

It causes typical epileptoid convulsions in cats during which death occurred, both when they are injected intravenously and when they are fed cultures of the organism

The organism may be recovered from the animal during the convulsions and after death

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CONSTIPATION AND INTESTINAL INFECTION IN EPILEPTICS

CHARLES A L REED, MD
CINCINNATI

The reports of Caro and Thom[1] and of Wherry and Oliver[2] make it important that I call attention to the fact that the relationship of constipation to epilepsy was the first clinical constant of fundamental importance which was forced on my attention in certain cases in which the patients came to me for surgical relief from the recognizably underlying intestinal stasis That epilepsy is better or worse as the associated constipation is better or worse is a matter of every day observation by every practitioner of experience That this constipation is associated with and dependent on mechanical distortions of the intestines is shown by over 800 Roentgen-ray studies of as many of my cases, something more than 2,000 plates being on file in my laboratory That certain of these patients have apparently recovered from their epilepsy, some from one to five years since operation, and that others have so improved and are so improving as apparently to be on the road to recovery following surgical corrections of the intestinal condition, would seem further to corroborate this relationship between constipation and epilepsy The fact that Caro and Thom[1] found constipation present in each of the seventy cases that they report as having investigated is an additional confirmation of the coincidence of the two conditions

The connecting link or links between constipation and epilepsy two apparently dissociated but persistently coincident conditions, remained to be demonstrated After careful consideration of all the phenomena presented in nearly 200 of these cases, I was forced logically to recognize that the intermediate condition was one of intoxication of obviously intestinal origin I was later convinced that this intoxication was due either to bacterial activity or to chemical changes in the intestinal content, or to both To investigate the bacteriologic phase of the question, I placed Dr F P Hyatt, assisted later by Dr L G Forrer, in charge of my laboratory After a search in a long series of cases, Dr Hyatt reported the frequent presence of an organism in the blood of epileptics that could not be found in the blood of nonepileptics This organism, injected into the blood of rabbits, caused convulsions like those of epilepsy in the human subject, and was recovered from the blood of the animals affected, thus conforming to the third law of Koch

After what seemed adequate investigation, and for the purpose of stimulating investigation along the same line by others, I made a preliminary report on the organism which, from its obvious relation to the disease, I called the *Bacillus epilepticus* Dr Hyatt and Dr Forrer have since reported the isolation of the organism in 168 out of 211 cases, many of which have been demonstrated to medical visitors to my clinic I have gladly sent slides and cultures to every investigator who has asked for them, including Dr Thom and Dr Wherry

I mention these facts because they have an antecedent relationship to the contributions of Caro and Thom, and of Wherry and Oliver These contributions are, respectively, reports of failure to find the *Bacillus epilepticus* in the blood of epileptics examined by them As purely negative reports, reports of the finding of nothing, they of course can have no relationship, except by inference, to the positive finding of an organism, which, at least, was the finding of something The obvious and unmistakable inference is that they, professional investigators in large institutions in which things in the blood are found if there are things in the blood to be found, having failed to find the *B epilepticus*, it follows either that that organism does not exist, or if it does exist, it is a contamination, or, in any event, it has nothing whatever to do with "idiopathic" epilepsy This is the issue and the only issue which has been raised by the two publications in question, and it is an issue which must be squarely met, both in the interest of science and in that of humanity

First The fact of the existence of the organism seems to be fairly well attested It has been isolated, described, photographed and reported by Bra,[3] by Hinkelmann[4] and by Hyatt and myself[5] In personal communications I am advised that Terhune[6] has isolated it in 75 per cent of the epileptics in the East Louisiana Hospital[6] W L Tiffany has found it at might be negative I wish to emphasize this fact In one case the fourth culture was found positive, while three others made from the same patient under similar conditions were negative As it is well known, epileptics frequently have a series of paroxysms, after which they are free of convulsions for varying lengths of time It seems probable that the time the cultures are made in reference to whether the patients are just beginning or are recovering from their convulsive periods is a factor in isolating the organism

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[1] Caro, H and Thom, D A A Bacteriologic Study of the Blood of Seventy Epileptics with Special Reference to the Bacillus Epilepticus of Reed The Journal A M A, Oct 7 1916 p 1088

[2] Wherry W B, and Oliver W W Blood Cultures in Epilepsy The Journal A M A Oct 7, 1916 p 1087

[3] Bra M Compt rend Acad d sc, Jan 6 1902 Rev neurol 1902, p 447 Bull Soc med d prat 1902 xii 289 Rev neurol, 1903, p 408

[4] Hinkelmann, A J Med Rev of Rev xxii, 664, New York Med Jour, civ, 531

[5] Reed Charles A L The Bacillus Epilepticus, The Journal A M A May 20 1916 p 1607

[6] Terhune W B A Bacillus Isolated from Epileptics The Journal A M A this issue p 1155

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I mention these facts because they have an antecedent relationship to the contributions of Caro and Thom, and of Wherry and Oliver These contributions are, respectively, reports of failure to find the *Bacillus epilepticus* in the blood of epileptics examined by them As purely negative reports, reports of the finding of nothing, they of course can have no relationship, except by inference, to the positive finding of an organism, which, at least, was the finding of something The obvious and unmistakable inference is that they, professional investigators in large institutions in which things in the blood are found if there are things in the blood to be found, having failed to find the *B epilepticus,* it follows either that that organism does not exist, or if it does exist, it is a contamination, or, in any event, it has nothing whatever to do with "idiopathic" epilepsy This is the issue and the only issue which has been raised by the two publications in question, and it is an issue which must be squarely met, both in the interest of science and in that of humanity

First The fact of the existence of the organism seems to be fairly well attested It has been isolated, described, photographed and reported by Bra,[3] by Hinkelmann[4] and by Hyatt and myself [5] In personal communications I am advised that Terhune[6] has isolated it in 75 per cent of the epileptics in the East Louisiana Hospital [6] W L Tiffany has found it at the East New York Hospital at Binghamton, R L McMeans, J R Wrather and R D Gist have isolated it at Amarillo, Texas, R W Noble has done the same at Temple, Texas, B W Rhemy has found it at the Fort Wayne (Ind) laboratory K W Smith of Madison, Wis, writes that his assistant has isolated it in two cases, and so has Robert McTavish of Fort William Henry, Ontario Both Caro and Thom, and Wherry and Oliver have seen the organism, as have numerous others It would seem, therefore, that the assumption or inference that the organism does not exist is hardly tenable

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[1] Caro H and Thom D A A Bacteriologic Study of the Blood of Seventy Epileptics with Special Reference to the Bacillus Epilepticus of Reed The Journal A M A, Oct 7, 1916 p 1088

[2] Wherry W B and Oliver, W W Blood Cultures in Epilepsy The Journal A M A, Oct 7, 1916 p 1087

[3] Bra M Compt rend Acad d sc Jan 6 1902 Rev neurol, 1902 p 447 Bull Soc méd d prat 1902 xii, 289, Rev neurol, 1903, p 408

[4] Hinkelmann A J Med Rev of Rev, xxii 664, New York Med Jour civ 531

[5] Reed Charles A L The Bacillus Epilepticus, The Journal A M A May 20 1916 p 1607

[6] Terhune W B A Bacillus Isolated from Epileptics, The Journal A M A this issue p 1155

Second The inference that the organism as seen in epileptics is a contamination would seem to be equally unfortunate Of course the possibility of contamination is always to be recognized It was recognized and provided against by Hyatt early in these investigations, as indicated in my report But contaminations are generally variable, even in the same class of cases, and the same contamination is liable to occur in all sorts of cases It would seem, however, that this particular "contamination" is constant under definite conditions As a "contamination" it is strange that this particular one should have been observed only in connection with epileptics It is likewise strange that the same "contamination" should occur and recur so constantly and under precisely the same circumstances at the hands of so many observers It is strange, too, that the same "contamination," found only when examining epileptics, should be disseminated in localities so widely separated as France, Canada, New York, Louisiana, Texas, Illinois, Indiana, Wisconsin and even Ohio In short, it would seem that, as a "contamination," the ways of *Bacillus epilepticus* are strikingly peculiar

Third The inference sought to be conveyed by these investigators that *Bacillus epilepticus,* whether actually occurring in the blood or as a contamination, has nothing to do with epilepsy, is based not only on their failure to find the organism in the blood, but also by their failure to induce convulsions by injecting it into rabbits As they failed to get the organism from the blood, they had to rely on the subcultures which I furnished them I sent Dr Thom a single agar slant which, of course, was a subculture Dr Wherry made a subculture from a subculture furnished him by Dr Hyatt If the injections were made from the subcultures thus furnished, the aggregate amount injected, as demonstrated by both Bra and Hyatt, and later confirmed by Terhune, was not sufficient to overcome the natural immunity of the animals If larger amounts were used, it had to come from further subcultures with resulting diminution of virulence to a point to make them relatively innocuous In any event, the experiments made in contravention of the published technic of Bra and Hyatt and Terhune cannot be said to be a test of either their methods or their results, and are, therefore, intrinsically worthless The effort, furthermore, to fortify this inference by quoting the work of somebody who has failed to find the organism at necropsy must go with the other negative findings Terhune has found the organism at necropsy Noble reports having found it in the cecum and the appendix Hinkelmann and Rhemy report having found it in the feces In my own work, the organism has been cultivated by Hyatt and Forrer from retroperitoneal glands, from the appendix and from the intestines removed at time of operation and from the contents of the cecum in living subjects These demonstrations, made frequently as to the glands and almost daily as to the cecum, and made in the presence of frequent and competent visitors to my service, are positive and not negative, and must stand until disproved by equally scientific methods actually applied to this particular organism and under similar circumstances

Fourth The classification of this organism, a point raised by Wherry and Oliver, is an entirely subsidiary question I have called it *Bacillus epilepticus* because of its demonstrated relation to epilepsy, and because Bra, Hyatt, Forrer, Terhune, Hinkelmann and others have isolated it from the blood of epileptics If it shall be shown that it indeed belongs to the *B subtilis* group, or to any other group, the fact would only signify that a member of that group, or of some other group, as the case might be, is the active agent in epilepsy, and is therefore in reality the *Bacillus epilepticus* I shall, however, leave this phase of the question alone for the present, and thus not anticipate the report of Dr Hyatt, shortly to appear, based on an exhaustive study of the characteristics of the organism It is of the highest importance, however, that its subsidiary importance, from the clinical standpoint, should be held in mind As pointed out by Hinkelmann, Rehmy and Noble, it may be found in the alimentary canal of persons who do not have epilepsy, although, so far as I know, there is no reliable report that it has ever been found in the blood of nonepileptics This would seem to imply, as my really large experience would indicate, that mechanical conditions of forced absorption are necessary to make it effective, and that any study of the organism or of any other organism or of toxin or toxins of intestinal origin as etiologic factors in epilepsy should be made only in connection with the physical condition of the gastro-intestinal tract

In view of the facts which I have set forth, it is evident that the onus of failure to find the organism must be with those making the failure Any explanation of such failure must, in both justice and generosity, be left to them I might, therefore, dismiss the discussion at this point if it were not that certain features of the report of Wherry and Oliver require special consideration This is all the more important in view of the fact that their report is based on the examination of the blood in five of my cases

It is, therefore, essential for a proper understanding of the facts by the profession that I give the completed bacteriologic records of my cases which Wherry and Oliver report from the standpoint of their individual observation These completed records are as follows

Case 1—Mr B, epilepsy with folie circulaire, coloenteroptosis, ileac stasis seventy-eight hours, colonic stasis over eighty hours, acidosis marked, persistent and irreversible Decompression operation had been done several years before without influencing the course of the disease Blood examinations by Dr Hyatt with reference to *B epilepticus* January 6, bouillon —, January 14, bouillon +, January 21 agar slant +, February 2, April 5, April 15, all bouillon, all —, May 1, bouillon +, May 10, agar plate +, bouillon —, May 17, both bouillon and agar plate —, May 23, —

The observations made by Drs Wherry and Oliver were made during a recrudescence of the folie circulaire, with convulsive seizures, February 24, March 6 and March 6 — really only two different dates These observations proved negative just as Dr Hyatt's proved negative, February 2, April 5 and April 15, which, it will be noted, both preceded and followed the observations by Drs Wherry and Oliver It is to be noted, furthermore, that this period of negative blood findings from February 2 to March 6 followed bactericidal and alkalinizing treatment, the discontinuance of which during the patient's period of confinement in the General Hospital doubtless had something to do with the reappearance of the organism in the blood, May 1

Case 2—This is not one of my cases

Case 3—Miss G R, typical grand mal, marked coloptosis, colonic stasis of more than fifty hours, ileac stasis, marked Blood examinations by Dr Hyatt as to *B epilepticus* January 19, no growth, February 2, positive, February 18, no growth, March 29, positive, April 12, no growth, bouillon having been used in all instances The blood for the last observation was taken by Drs Wherry and Hyatt about thirty-five days after the patient had been subjected to operation during which time she had been under bactericidal, alkalinizing and eliminative treatment, which may have had something to do with the finding

Case 4—Mr L, epilepsy with constipation, marked gastrocoloptosis with both ileac and colonic stasis, marked acidosis Blood examinations with reference to *B epilepticus* January 16, +, February 2, —, March 4, —, March 22, —, April 12, — It will be noted in this case also that the last two observations both negative, were made several weeks after operation, when in the ordinary course of our experience, negative findings are about due (It was with the expectation of a negative finding rather than any other, that both this case and the preceding one were submitted to Dr Wherry, April 12)

Case 5—Miss E, epilepsy and obstinate constipation, extreme gastro-enteroptosis, ileac and colonic stasis marked, the latter in excess of seventy hours This patient was referred to Dr Wherry jointly with Dr Hyatt for diagnostic study Each prepared broth, into which the inoculation was made Three of the tubes retained by Dr Hyatt showed no growth, while one of them, prepared by Dr Wherry, proved positive as to *B epilepticus* This case did not come under treatment and, consequently, no further blood studies were made

Case 6—Mr A, epilepsy, with extreme constipation, extreme enterocoloptosis, with resulting stasis, has had two decompression operations without improvement Blood studies with reference to *B epilepticus* April 21, +, April 25 —, May 16 —, May 23, —, from and including April 21, the patient had been under intracolonic bactericidal treatment (by high enemas twice daily) and forced alkalinization and elimination by the intravenous method This was to prepare him for operation, April 25 The specimen was taken for Dr Wherry on that date, immediately before the operation was done That it and the two subsequent observations by Dr Hyatt should have proved negative is not in the least surprising especially in view of prompt and as yet complete discontinuance of the previously frequent and severe attacks

It will be seen from an analysis of these records that positive findings were not made in every specimen taken In the files of Dr Hyatt's reports now before me, I find several cases in which positive findings were not reached until in one instance after the sixth In easily one half of our cases, the finding was negative at the first examination As nearly as I can estimate in this record, the ratio of positives to negatives is as 7 13 In leafing through this file and taking the cases as they come alphabetically, I find one series of five and another of eight, in which the first examinations proved negative It will be seen from this that the negative findings of Wherry and Oliver in single examination of four cases and three examinations of one case are not the least surprising, especially in view of the fact that one of these cases did prove positive in their own medium The same observation applies with even greater emphasis to the report of Caro and Thom

And now, a word as to the classic work of Bra It so happened in Europe, at the beginning of this century, that there were several persons who occupied positions which made it their business to find things in the blood, if there were things in the blood to be found Some were bacteriologists to great hospitals, some were pathologists to institutions for epileptics They were charged with research, to solve the great mystery of the ages with respect to epilepsy It also happened about this time that M Bra — Marie Bra — untrammeled by the medieval scholasticism that then and yet beclouds the subject, went to Ville-Evrard to study the blood of epileptics She found an organism — found it again and again — found it seventy odd times in a hundred cases — the same organism which we have found and are yet finding under similar circumstances here in America She injected it into rabbits, gave them epilepsy, and recovered it from their blood She wrote reports, model reports, of her work, and with them, photographs of the organism in the blood — just as we are now doing in America Then it so happened that the men whose prestige depended on finding things, and who had not found this particular thing, suddenly found it impossible to find this particular thing One after another could find nothing From Moscow to Lille, from the Rhine to the Tiber, each echoed to the others, "Nothing here" But the undisputed and indisputable fact, the positive fact, the photographed, printed and proved fact, the fact that an organism had been isolated from the blood of epileptics, remained These facts, taken with other facts, seemed to imply a causal relationship between the organism and epilepsy No new facts were or have been brought out to give it a new interpretation It was simply beclouded by a policy of concerted and cumulative negation This was the process of "discrediting" an achievement which did not add to the prestige of the other fellows Then, Marie Bra, disgusted with the treatment she had received, snapped her fingers at the "scientific" world — and married It thus happened that humanity was cheated out of a great truth for fifteen years Is the policy of concerted cumulative negation again contemplated? In this connection it is important for me to say that my attitude with respect to this question is purely that of a clinician interested in the practical phase of the problem As such I, like other clinicians, must accept and be guided by the technical findings of pathologists and bacteriologists, but they must be the findings of something, not of nothing

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Simple Procedure for Nasal Bleeding—Spontaneously recurring epistaxis is usually due to a superficial ulceration of the mucous membrane over a vessel or capillaries on the septum of the anterior nares These hemorrhages as a rule are easily stopped by home remedies, but sometimes the patient seeks relief and goes to the physician between attacks At these times it is rather difficult to locate the exact spot from which the bleeding originated If epinephrin chlorid is applied by a cotton-tipped applicator to the side of the septum from which the hemorrhage occurs, the whole mucous membrane, except in those spots in which the bleeding takes place, becomes blanched If it is a vessel that has caused the bleeding, it will stand out strongly in contrast to the rest of the mucous membrane If it has been due to capillaries, a red circular spot about the size of half a ten cent piece stands out prominently This procedure makes it a simple matter to find the bleeding spot and cauterize it with 90 per cent trichloracetic acid The acid obliterates the vessel or capillaries, and in a few days it heals over, removing with very little trouble the source of bleeding—William Lapat, M D, Savannah, Ga

New Instruments and Suggestions

THE ADMINISTRATION OF CERTAIN DELIQUESCENT AND LIQUID DRUGS IN CAPSULES

N S Davis, M D, Chicago

It is so much pleasanter to take medicine in capsules than in other ways that it has been my habit when I can do so to administer it in them Pharmacists find it impossible to dispense extemporaneously in capsules many deliquescent substances and most liquids A dozen or more years ago my attention was called to the possibility of dispensing many such substances in a capsule by using a wax mass In this way potassium iodid and similar drugs can be given, also guaiacol, oil of sandalwood and many other liquids which one wishes to prescribe in doses of from 5 to 10 minims The iodids can be given in doses of 10 or 12 grains (from 0 5 to 0 8 gm), and the pill will be readily absorbed, as is shown by finding iodin in the saliva in three minutes or less after such a capsule is swallowed

The capsules are permanent, keeping for weeks ordinarily and *in the hottest, dampest weather, if placed in a corked bottle*

For the making of a pill to be placed in a capsule containing *sodium or potassium iodid in doses of 10 or 12 grains* (from 0 5 to 0 8 gm), about 1½ grains (0 1 or 0 15 gm) of the wax mass is needed Red mercuric iodid and other drugs can be incorporated in the same mass if they are required

To make a pill containing guaiacol, oil of sandalwood or similar liquids in doses of 5 minims or thereabouts, the same quantity of mass is needed

I have often given iodin incorporated with this mass, and have obtained from it as prompt and as good results as when it was given in solution But I have found it possible to give it, without discomfort to patients, in larger doses For instance, from 2 to 4 grains (from 0 15 to 0 25 gm) can be given in this way, though I rarely have given more than 2½ grains at a time I have made it a practice to dilute the iodin well with the mass in order that the pill may not cause gastric discomfort, and possibly I use more of the mass than *is necessary for this purpose* I usually prescribe at first 1 or 2 grains (0 05 or 0 10 gm) with 5 grains (0 3 gm) of wax mass Undoubtedly, the oil in the mass is responsible for carrying the iodin and for diluting it and releasing it so as not to cause gastric discomfort When administered in this way, iodin appears with its usual promptness in the saliva Cascara, aloes, codein and many other drugs can be *incorporated with it when they are needed*

The wax mass is made of one part beeswax and three parts of castor oil These ingredients are melted and mixed by heating them gently When liquefied and thoroughly mixed, the mass is allowed to cool It makes a somewhat granular pill I do not know who invented the mass, and I have rarely *found a pharmacist who knew of it*

I have never seen the castor oil produce looseness of the bowels, and we would not expect it to, so little of it is administered at a time

Guaiacol and oil of sandalwood and similar substances can be readily mixed with from one-half to equal parts of beeswax and made by gently heating into a mass Such a one, however, is needed only when a prescriber is using these substances with frequency

7 West Madison Street

Steps in Thought.—Observation, comparison, deduction and trial the success or failure of which inspires and directs further observations which form the starting point of a new and wider cast of his net into the sea of the unknown, these are the successive steps in the discipline of thought which has slowly and inevitably led man from helpless dependency on the caprice of nature to the present day when his words travel with the speed of light and his instruments pierce the depths of interstellar space —T Brailsford Robertson

Therapeutics

THE TREATMENT OF DIABETES

(Continued from page 1091)

Exercise—This forms a valuable adjunct in the treatment of diabetes It serves to raise the carbohydrate tolerance and to build up active protoplasmic tissue at the expense of fat In addition, the patients who exercise feel better and take more interest in life The appetite is increased, but the increase is not greater than the increased assimilative power Allen advises active exercise for practically all diabetics Strong patients may begin exercise during the preliminary fasting period, weaker ones, during the period of dieting Exercise is especially advantageous immediately following a meal containing carbohydrate Short periods of vigorous exercise are preferable to long continued monotonous walks The patient should stop just short of uncomfortable fatigue In children, exercise is of especial benefit, as it aids in the building up of muscular tissue and favorably influences growth

Acidosis — In the course of diabetes, large amounts of the "acetone bodies," namely, acetone, aceto-acetic acid and beta-oxybutyric acid, may be produced These substances, for the most part, are products of the incomplete combustion of fats,[11] and appear when there is a disproportionately great metabolism of fat as compared with carbohydrate For the complete combustion of fat, it seems essential that a certain amount of carbohydrate be simultaneously burned Under the older methods of treatment the production of large amounts of the acetone bodies at some stage of the disease was usual, and as a result, a large proportion of all diabetics, and especially younger patients, ultimately developed coma — presumably as a direct result of overproduction of the acetone bodies By strict adherence to the rules of treatment already formulated, it is usually possible to reduce the production of acetone bodies to a minimum

Of the acetone[12] substances, acetone itself is an adventitious decomposition product of aceto-acetic acid, and is probably never formed in sufficient quantity to do harm Aceto-acetic acid and beta-oxybutyric acid, however, are fairly strong acids, and for that reason are capable of doing much harm to the organism by the neutralization and removal of the available bases Acids of one kind or another are always being produced in the course of metabolism, and the body possesses an efficient mechanism whereby these acids may be neutralized or excreted A slight excess in acid production, such as a few grams of beta-oxybutyric acid, can be completely compensated for With a larger production of acids, especially if continued over a considerable time, the compensatory mechanism of the body *may* become overtaxed, with the result that an actual depletion of the alkali reserve of the body fluids and tissues occurs Such a condition is known as acidosis In diabetes, the appearance of acetone bodies in the urine signifies that the ideal result of treatment has not been attained, but it does not necessarily mean that acidosis is present Qualitative tests alone on the urine are not sufficient either to confirm or to exclude acidosis, as a strong test may be obtained when no acidosis is present, and only a faint reaction at the height of the coma of acidosis

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[11] Proteins are also to a lesser extent, a source of acetone bodies

[12] For the detection of acetone bodies in the urine two tests are in general use the nitroprussid reaction (Legal Arnold Rothera) and the ferric chlorid reaction (Gerhardt) The nitroprussid test is a very delicate one for either acetone or aceto acetic acid The ferric chlorid test is a less delicate one and serves to detect aceto acetic acid Since amounts of aceto acetic acid smaller than are required to give the ferric chlorid reaction are of no especial significance there is in general no reason for using the more delicate nitroprussid test *If one of the* acetone substances is present in the urine all are present and there is no indication for testing for more than one of them The ferric chlorid test is carried out by adding to the urine a strong solution of ferric chlorid until no further precipitation of phosphates occurs a purple color indicates the presence of aceto acetic acid Salicylate give a similar reaction but the color may be obtained after the urine has been *boiled for a few minutes, whereas aceto acetic acid is* destroyed by boiling

A high excretion of ammonia in a twenty-four hour specimen of urine is an indication of abnormal activity on the part of the defensive mechanism of the body, and is a warning signal Certain symptoms, as increasing drowsiness and deep breathing of the "air hunger" type (acyanotic hyperpnea), may indicate to the skilled observer the onset of acidosis, but for an accurate quantitative idea of the degree of acidosis, determinations on the alveolar air or blood must be made

Alveolar Air — In acidosis, there is a diminished carbon dioxid tension in the alveolar air The determination of this tension is a simple bedside procedure Marriott has recently described a rapid clinical method for the purpose, for the details of which the reader is referred to the original paper [13]

A little more difficult, but at the same time more accurate, are determinations of the bicarbonate content of the plasma by Van Slyke's vacuum pipet,[14] or the total alkali reserve of the plasma by Marriott's[15] colorimetric method These methods all show the degree of acidosis, and it is important that this be known, especially during the fasting period, since failure to recognize a progressive acidosis may result in serious or even fatal consequences

According to Stillman,[16] diabetics may react in a number of ways to the preliminary fast, as regards the development of acidosis Some show no significant acidosis either before, during or after the fasting period Others, with a severe grade of acidosis, existing before the fast, improve during the first fast or during the subsequent fasts A third group shows a fairly constant, low grade acidosis not especially influenced one way or the other by the fast, but often relieved by subsequent, frequently repeated fasts, alternating with periods of low diet A fourth group develops increasing acidosis during the fast which may even become of a sufficient degree to prove fatal

With proper dietetic regulation, the development of acidosis of a serious grade is unusual The treatment of acidosis is mainly dietetic and preventive Patients who show a tendency to acidosis while on a diet otherwise suitable should be frequently fasted As has been mentioned, however, a few patients develop acidosis of an alarming grade during the fasting period, as shown by the characteristic symptoms and by a progressive fall of the carbon dioxid tension of the alveolar air The normal tension is in the neighborhood of 40 mm , a tension as low as 35 mm may be considered as insignificant, tensions below 35 mm indicate acidosis, and 20 mm is to be considered the danger point When such a degree of acidosis is approached during a fasting period, the indication is to break the fast by allowing a restricted diet, chiefly of green vegetables In such cases, subsequent fasting frequently causes the acidosis to disappear

Alkali Therapy — Dietetic treatment prevents the formation of acetone bodies and is the rational treatment for acidosis Occasionally, however, the acidosis may become of such a grade that the administration of alkali is required Alkalies neutralize acids already produced and replenish the depleted alkali reserve of the body, but have no effect in inhibiting the production of acids Alkali administration is merely a temporary means of checking acidosis, but a valuable procedure when acidosis is of a severe enough grade to threaten life Alkali therapy should not in any measure replace dietetic regulation and should be used only to tide the patient over a critical period Alkali is indicated when, as a result of the patient's failure to observe dietetic regulation, the alveolar carbon dioxid tension has fallen to 20 mm or lower, or if coma is present, or obviously impending, and also when, as a result of fasting, progressive acidosis occurs which is not promptly checked by feeding green vegetables

Alkali in the form of sodium bicarbonate may be administered by mouth, intravenously or subcutaneously The amount necessary is determined by the degree of acidosis, the size of the patient, and the therapeutic result obtained as gaged by rise in carbon dioxid tension and symptomatic improvement

Sodium bicarbonate in solution may be given by mouth In adults, it is usually futile to give less than 4 gm at a dose, which may be repeated every four or five hours Doses larger than 15 gm are generally not well tolerated Alkali should be continued until the alveolar carbon dioxid tension has risen above 30 mm

Many diabetics, especially those approaching coma, are unable to retain alkali when given by mouth, on account of nausea and vomiting In such cases, and, in fact, in the majority of cases in which alkali is required at all, intravenous injection is the method of choice A 4 per cent solution of sodium bicarbonate may be used and as much as 500 c c injected slowly at a time The injection may be repeated as often as indicated by the alveolar air findings or the symptoms

When, for any reason, intravenous injections are not feasible, alkali may be administered subcutaneously Sodium bicarbonate, on boiling, is converted into the carbonate, which is so caustic that it cannot be injected subcutaneously with safety If, however, the carbonate is reconverted into bicarbonate, it is available for subcutaneous injection The conversion may be accomplished by passing a stream of carbon dioxid from a cylinder through the cold sterile solution until saturated, as shown by a change in color of a small amount of added phenolphthalein from pink to colorless Solutions stronger than 3 per cent bicarbonate should not be used for subcutaneous administration As in other methods of giving alkali, the quantity will depend on the degree of acidosis and the response obtained

From what has been written it is quite apparent that the treatment of diabetes requires special knowledge and more constant and intelligent care than does any other chronic disease Drugs, with the exception of the alkalies, are worthless, "organotherapy" is a failure, many of the so-called "diabetic foods" are fraudulent, a *laissez faire* policy is fatal The disease is combated only by management of the diet, which requires as nice discrimination in its use both as to quantity and quality as does any drug Cooperation on the part of the patient is another requisite When proper care and satisfactory cooperation can be obtained, the results are usually satisfactory

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[13] Marriott, W McKim The Determination of Alveolar Carbon Dioxid Tension by a Simple Method, The Journal A M A May 20 1916 p 1594

[14] Van Slyke Paper to appear soon in Jour Biol Chem

[15] Mariott, W McKim A Method for the Determination of the Alkali Reserve of the Blood Plasma Arch Int Med June 1916 p 840

[16] Stillman Am Jour Med Sc 1916 cli, 505

New Instruments and Suggestions

THE ADMINISTRATION OF CERTAIN DELIQUESCENT AND LIQUID DRUGS IN CAPSULES

N S Davis, M D, Chicago

It is so much pleasanter to take medicine in capsules than in other ways that it has been my habit when I can do so to administer it in them Pharmacists find it impossible to dispense extemporaneously in capsules many deliquescent substances and most liquids A dozen or more years ago my attention was called to the possibility of dispensing many such substances in a capsule by using a wax mass In this way potassium iodid and similar drugs can be given, also guaiacol, oil of sandalwood and many other liquids which one wishes to prescribe in doses of from 5 to 10 minims The iodids can be given in doses of 10 or 12 grains (from 0 5 to 0 8 gm), and the pill will be readily absorbed, as is shown by finding iodin in the saliva in three minutes or less after such a capsule is swallowed

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Therapeutics

THE TREATMENT OF DIABETES

(Continued from page 1091)

Exercise—This forms a valuable adjunct in the treatment of diabetes It serves to raise the carbohydrate tolerance and to build up active protoplasmic tissue at the expense of fat In addition, the patients who exercise feel better and take more interest in life The appetite is increased, but the increase is not greater than the increased assimilative power Allen advises active exercise for practically all diabetics Strong patients may begin exercise during the preliminary fasting period, weaker ones, during the period of dieting Exercise is especially advantageous immediately following a meal containing carbohydrate Short periods of vigorous exercise are preferable to long continued monotonous walks The patient should stop just short of uncomfortable fatigue In children, exercise is of especial benefit, as it aids in the building up of muscular tissue and favorably influences growth

Acidosis — In the course of diabetes, large amounts of the "acetone bodies," namely, acetone, aceto-acetic acid and beta-oxybutyric acid, may be produced These substances, for the most part, are products of the incomplete combustion of fats,[11] and appear when there is a disproportionately great metabolism of fat as compared with carbohydrate For the complete combustion of fat, it seems essential that a certain amount of carbohydrate be simultaneously burned Under the older methods of treatment the production of large amounts of the acetone bodies at some stage of the disease was usual, and as a result, a large proportion of all diabetics, and especially younger patients, ultimately developed coma — presumably as a direct result of overproduction of the acetone bodies By strict adherence to the rules of treatment already formulated, it is usually possible to reduce the production of acetone bodies to a minimum

Of the acetone[12] substances, acetone itself is an adventitious decomposition product of aceto-acetic acid, and is probably never formed in sufficient quantity to do harm Aceto-acetic acid and beta-oxybutyric acid, however, are fairly strong acids, and for that reason are capable of doing much harm to the organism by the neutralization and removal of the available bases Acids of one kind or another are always being produced in the course of metabolism, and the body possesses an efficient mechanism whereby these acids may be neutralized or excreted A slight excess in acid production, such as a few grams of beta-oxybutyric acid, can be completely compensated for With a larger production of acids, especially if continued over a considerable time, the compensatory mechanism of the body may become overtaxed, with the result that an actual depletion of the alkali reserve of the body fluids and tissues occurs Such a condition is known as acidosis In diabetes, the appearance of acetone bodies in the urine signifies that the ideal result of treatment has not been attained, but it does not necessarily mean that acidosis is present Qualitative tests alone on the urine are not sufficient either to confirm or to exclude acidosis, as a strong test may be obtained when no acidosis is present, and only a faint reaction at the height of the coma of acidosis

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[11] Proteins are also to a lesser extent, a source of acetone bodies

[12] For the detection of acetone bodies in the urine two tests are in general use the nitroprussid reaction (Legal Arnold Rothera) and the ferric chlorid reaction (Gerhardt) The nitroprussid test is a very delicate one for either acetone or aceto acetic acid The ferric chlorid test is a less delicate one and serves to detect aceto acetic acid Since amounts of aceto acetic acid smaller than are required to give the ferric chlorid reaction are of no especial significance there is in general no reason for using the more delicate nitroprussid test If one of the acetone substances is present in the urine all are present, and there is no indication for testing for more than one of them The ferric chlorid test is carried out by adding to the urine a strong solution of ferric chlorid until no further precipitation of phosphates occurs a purple color indicates the presence of aceto acetic acid Salicylate give a similar reaction but the color may be obtained after the urine has been boiled for a few minutes, whereas aceto acetic acid is destroyed by boiling

A high excretion of ammonia in a twenty-four hour specimen of urine is an indication of abnormal activity on the part of the defensive mechanism of the body, and is a warning signal Certain symptoms, as increasing drowsiness and deep breathing of the "air hunger" type (acyanotic hyperpnea), may indicate to the skilled observer the onset of acidosis, but for an accurate quantitative idea of the degree of acidosis, determinations on the alveolar air or blood must be made

Alveolar Air—In acidosis, there is a diminished carbon dioxid tension in the alveolar air The determination of this tension is a simple bedside procedure Marriott has recently described a rapid clinical method for the purpose, for the details of which the reader is referred to the original paper[13]

A little more difficult, but at the same time more accurate, are determinations of the bicarbonate content of the plasma by Van Slyke's vacuum pipet,[14] or the total alkali reserve of the plasma by Marriott's[15] colorimetric method These methods all show the degree of acidosis, and it is important that this be known, especially during the fasting period, since failure to recognize a progressive acidosis may result in serious or even fatal consequences

According to Stillman,[16] diabetics may react in a number of ways to the preliminary fast, as regards the development of acidosis Some show no significant acidosis either before, during or after the fasting period Others, with a severe grade of acidosis, existing before the fast, improve during the first fast or during the subsequent fasts A third group shows a fairly constant, low grade acidosis not especially influenced one way or the other by the fast, but often relieved by subsequent, frequently repeated fasts, alternating with periods of low diet A fourth group develops increasing acidosis during the fast which may even become of a sufficient degree to prove fatal

With proper dietetic regulation, the development of acidosis of a serious grade is unusual The treatment of acidosis is mainly dietetic and preventive Patients who show a tendency to acidosis while on a diet otherwise suitable should be frequently fasted As has been mentioned, however, a few patients develop acidosis of an alarming grade during the fasting period, as shown by the characteristic symptoms and by a progressive fall of the carbon dioxid tension of the alveolar air The normal tension is in the neighborhood of 40 mm, a tension as low as 35 mm may be considered as insignificant, tensions below 35 mm indicate acidosis, and 20 mm is to be considered the danger point When such a degree of acidosis is approached during a fasting period, the indication is to break the fast by allowing a restricted diet, chiefly of green vegetables In such cases, subsequent fasting frequently causes the acidosis to disappear

Alkali Therapy—Dietetic treatment prevents the formation of acetone bodies and is the rational treatment for acidosis Occasionally, however, the acidosis may become of such a grade that the administration of alkali is required Alkalies neutralize acids already produced and replenish the depleted alkali reserve of the body, but have no effect in inhibiting the production of acids Alkali administration is merely a temporary means of checking acidosis, but a valuable procedure when acidosis is of a severe enough grade to threaten life Alkali therapy should not in any measure replace dietetic regulation and should be used only to tide the patient over a critical period Alkali is indicated when, as a result of the patient's failure to observe dietetic regulation, the alveolar carbon dioxid tension has fallen to 20 mm or lower, or if coma is present, or obviously impending, and also when, as a result of fasting, progressive acidosis occurs which is not promptly checked by feeding green vegetables

Alkali in the form of sodium bicarbonate may be administered by mouth, intravenously or subcutaneously The amount necessary is determined by the degree of acidosis, the size of the patient, and the therapeutic result obtained as gaged by rise in carbon dioxid tension and symptomatic improvement

Sodium bicarbonate in solution may be given by mouth In adults, it is usually futile to give less than 4 gm at a dose, which may be repeated every four or five hours Doses larger than 15 gm are generally not well tolerated Alkali should be continued until the alveolar carbon dioxid tension has risen above 30 mm

Many diabetics, especially those approaching coma, are unable to retain alkali when given by mouth, on account of nausea and vomiting In such cases, and, in fact, in the majority of cases in which alkali is required at all, intravenous injection is the method of choice A 4 per cent solution of sodium bicarbonate may be used and as much as 500 c c injected slowly at a time The injection may be repeated as often as indicated by the alveolar air findings or the symptoms

When, for any reason, intravenous injections are not feasible, alkali may be administered subcutaneously Sodium bicarbonate, on boiling, is converted into the carbonate, which is so caustic that it cannot be injected subcutaneously with safety If, however, the carbonate is reconverted into bicarbonate, it is available for subcutaneous injection The conversion may be accomplished by passing a stream of carbon dioxid from a cylinder through the cold sterile solution until saturated, as shown by a change in color of a small amount of added phenolphthalein from pink to colorless Solutions stronger than 3 per cent bicarbonate should not be used for subcutaneous administration As in other methods of giving alkali, the quantity will depend on the degree of acidosis and the response obtained

From what has been written it is quite apparent that the treatment of diabetes requires special knowledge and more constant and intelligent care than does any other chronic disease Drugs, with the exception of the alkalies, are worthless, "organotherapy" is a failure, many of the so-called "diabetic foods" are fraudulent, a *laissez faire* policy is fatal The disease is combated only by management of the diet, which requires as nice discrimination in its use both as to quantity and quality as does any drug Cooperation on the part of the patient is another requisite When proper care and satisfactory cooperation can be obtained, the results are usually satisfactory

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[13] Marriott, W McKim The Determination of Alveolar Carbon Dioxid Tension by a Simple Method, The Journal A M A, May 20 1916, p 1594

[14] Van Slyke Paper to appear soon in Jour Biol Chem

[15] Marriott, W McKim A Method for the Determination of the Alkali Reserve of the Blood Plasma, Arch Int Med, June, 1916 p 840

[16] Stillman Am Jour Med Sc 1916 cli 505

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SATURDAY, OCTOBER 14, 1916

THE MORBIDITY AND MORTALITY STATISTICS OF SCARLET FEVER

Since the day when Sydenham first differentiated scarlet fever from measles and gave to the disease a distinctive name, the malady has been the subject of much speculation and not a little careful study Many of the peculiarities of scarlet fever as a highly infectious disease still challenge the physician and the epidemiologist Among the reportable diseases of childhood, scarlet fever probably offers the best opportunity to investigate the incidence of epidemics and the influence of geographic, hereditary and seasonal factors, as well as the possible changes in therapeutic measures on the character of the underlying disease Donnally[1] has selected scarlet fever for the study of morbidity and fatality, for starting out with all the reportable diseases, as he remarks, it was found that scarlet fever was the one which admitted of such investigation with the greatest satisfaction, because it is and has been for some time generally well reported and has undergone little change in treatment, and also because it can usually be readily diagnosticated Diphtheria has had its specific treatment, which has tremendously influenced the figures Measles, whooping cough and chickenpox are often so mild and so much a matter of course that a good proportion of cases are passed through without a call for a medical attendant, and remain unknown to the authorities Difficulties of nice diagnosis rule out cerebrospinal meningitis from such a study, and infantile paralysis is too recent a disease in health office figures to make its study worth while

An intelligently guided selection of data from several million cases of scarlet fever throughout the world where reasonably dependable notification exists ought to afford a basis for fairly valid deductions Donnally found among approximately 2,000,000 presumably well reported cases that there were 104,500 deaths, which gives a case fatality of 5.25 per cent, while the morbidity rate was 3.9, that is, about four persons in each thousand inhabitants had scarlet fever, of whom one person in twenty died

A marked difference in the incidence of scarlet fever in different localities unquestionably prevails In large cities the disease may be abundant in some parts and slight or absent in others, in London this is continuously so In only four of forty years was the incidence of scarlet fever in New York and Brooklyn the same, at times it differed widely, and yet their mean morbidity rates for the entire forty years were identical Not only is scarlet fever more abundant in some places than in others, but its fatality in one locality may be much greater than in others The disease, says Donnally, therefore does possess a *genius loci*

Periodicity in the appearance of epidemics of scarlet fever cannot be made out from the newest epidemiologic study Morbidity and mortality rates for the disease seem to be independent of each other Season itself does not influence morbidity A decline in morbidity has not generally been made out Notification is at present probably more thorough than ever before While insusceptible of proof, it is probable that this factor has served to keep morbidity rates in most places approximately level Where notification has been of longest duration and most thorough (Norway), a reduction in the incidence of scarlet fever has been observed The sexes as a whole show equal susceptibility Under 5 years of age, boys are more susceptible, while between 5 and 15 years of age, girls are more susceptible than boys About half of the cases occur in children between 3 and 8 years, and 90 per cent in those under 15 years of age About two children out of three between 3 and 8 years of age contract scarlet fever if exposed to it in their homes, if they have not previously had it

Scarlet fever appears to be a milder disease than formerly The most striking fact about the case fatality of scarlet fever in the past half century has been its consistent, general and marked reduction This diminution in case fatality has occurred in the absence of specific treatment, and while there have been frequent irregularities in its descent, the general downward course is unmistakable and considerable, even comparable to diphtheria in its fall in some places This reduction exceeds that of the general reduction in infant mortality

Although the belief in the milder character of the scarlet fever of the present day is widely shared by those whose experience has given them a range of comparative observation over thirty or forty years, the explanation of the lowered fatality is not easy to find Donnally suggests that the removal of scarlet fever patients to contagious hospitals has improved the care of many patients and may be a contributing factor to lowered fatality Over 90 per cent of the patients in London are treated in contagious hospitals, whereas in 1890 there were but 42.8 per cent thus treated As patients in hospitals are usually given diphtheria antitoxin, it is quite probable that this is another important factor, because combined scarlet fever and diphtheria have had a high fatality. It is conceivable but incapable of proof, that there is an immunity which may have been increasing in the 300 years more or less since the disease was first recognized.

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[1] Donnally H H Scarlet Fever Morbidity and Fatality Am Jour Dis Child September 1916 p 205

Donnally's studies further substantiate the belief that scarlet fever is more peculiarly a disease of childhood than is measles or whooping cough, although most children have the latter and acquire a consequent immunity. Nonimmune adults quite readily fall ill with them when exposed, but not so with scarlet fever, with which few exposed adults become affected.

As additional dicta derived from the newly collected data, it may be stated that scarlet fever has regularly been more prevalent and attended by greater fatality in some places than in others. At all ages males succumb more readily to it than females. Case fatality is lowest in those about 10 to 15 years of age. The younger the child, the less is his chance of recovery. About 90 per cent. of deaths from scarlet fever occur in those under 10 years of age.

THE ERADICATION OF WHOOPING COUGH

Pertussis is certainly not an uncommon disease, nor does it deserve to be ranked as a particularly mild affection. It is impossible to give any dependable statistics regarding the incidence of whooping cough because it has not been a reportable disease until lately. Even in New York City, several years after pertussis became legally reportable there continued to be more deaths from the disease than reported cases. The continued agitation and educational propaganda in the matter have begun to alter the situation so that in contrast with 174 cases reported in Greater New York in 1900, fifteen years later there were nearly 7,000 cases reported from Manhattan and Bronx alone.

The older writers regarded whooping cough as a distinctly fatal disease. In England the mortality has been rather high. In America, where it is regarded less seriously, there has nevertheless at times been a higher mortality from pertussis than from scarlet fever. Last year there was a case mortality of 5.6 per cent., that is, 385 deaths out of 6,868 reported cases in New York City. It has been stated that the actual case mortality, when one takes into consideration the unreported and atypical cases and those among adults, is probably from 0.5 to 1 per cent.

Adequate sanitary recommendations for the control and amelioration of a menacing contagious disease presuppose some epidemiologic information. To secure this has been the object of a study begun in 1913 in the Bureau of Laboratories of the New York City Department of Health, a few results of which are already available.[1] The mere history of the death rate from pertussis, independent of any notable progress in prophylaxis or treatment, points a moral as to what might be done if real scientific effort were applied to the problem of whooping cough, and all demands of modern hygiene were effectively enforced in the case of this underrated disease. In the last generation the death rate from whooping cough in the former city of New York (Manhattan and Bronx) has steadily decreased from 25.5 per hundred thousand population to about 7. It is interesting to note that it went up as high as 58.82 and that it was frequently four to five times its present rate. The lowest rate was 4.71 in 1908. Besides the general tendency toward a lower death rate, no rhythm of any kind can be discerned; the number of deaths seems to be independent of any meteorologic or other uncontrollable agencies. The steady lowering of the death rate is probably due to the general increase in knowledge and observation of public and personal hygiene.

One cannot refrain, says Luttinger, who compiled the facts here reported, from comparing this lowering of the pertussis death rate with that of diphtheria. Although no specific therapy had been used in whooping cough until recently, it compares favorably with the diphtheria curve influenced by antitoxin. How much greater might have been the beneficent outcome of an added earlier interest and an aggressive campaign for the management of whooping cough!

The new epidemiologic studies in New York City confirm the belief that pertussis still is a very prevalent disease. Even today probably not more than a tenth of all cases in the metropolis are reported to the department of health. The facts ascertained are as follows:[1] About 80 per cent. of all cases and 97 per cent. of all deaths are in children under 5 years of age. Fifty per cent. of the cases are in those under 2 years of age, and over 50 per cent. of all deaths are in children under 1 year of age. The incidence of pertussis among girls, as well as the number of deaths, is constantly higher than among boys, the proportion of both morbidity and mortality being about 44 per cent. for boys and 56 per cent. for girls. In contradistinction to other respiratory diseases, whooping cough seems to be most prevalent in the spring and summer months, and the mortality curve reaches its highest point in August, showing a similarity to the diarrheal diseases, although most deaths are due to pertussis pneumonia. Poor surroundings, congestion and lack of fresh air and proper care because of the guardian's precarious economic status seem to have a determining effect on both the morbidity and mortality of pertussis.

No one can doubt that whooping cough is transmitted by direct contact. Luttinger states that in nearly 60 per cent. of cases the source of infection is given as coming from a neighbor. He believes that adult pertussis carriers probably have been disseminating the disease and have remained unrecognized, owing to the atypical form in which it manifests itself Here again, as so often in recent years, the unsuspected carrier has seriously complicated the problems of preventive medicine

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[1] Luttinger, Paul: The Epidemiology of Pertussis, Am. Jour. Dis. Child., September, 1916, p. 290.

In view of the current divergence of opinion, which represents in reality a lack of dependable observations, on the efficiency of the vaccine treatment, the report from the New York health experts deserves serious consideration We are told that pertussis vaccines, as prepared by the bureau of laboratories, when given early, have continued to give good curative and prophylactic results at the whooping cough clinic and in the hands of a large number of private practitioners and health officers The very small number of deaths under vaccine treatment and the vast crowds who apply for treatment at the clinic indicate a favorable and possibly tangible influence of the specific treatment on the further epidemiology of the disease [1]

In addition to the obvious measures which our present knowledge suggests to reduce the morbidity and mortality of whooping cough, especially in very young children, it is suggested that quarantine should extend during the first two weeks of the disease Luttinger advises the establishment of more whooping cough clinics and the organization of boat camps, where possible, during the summer time for the rational treatment of pertussis He also advocates the use of a suitably constructed pertussis hospital, in which the care of patients with severe attacks of whooping cough could be more efficiently undertaken and which would afford an opportunity for further scientific research on laboratory as well as clinical lines If to these measures are added the education of the public and the awakening of the medical profession to its full duty in the matter, there is every prospect of a successful inroad on the ravages of a widespread contagion

REMOTE EFFECTS OF NEPHRITIS

A variety of evidence, often of an ill defined and somewhat vague character, has gradually been accumulating to show that defects of the renal function such as are seen in nephritis exert something more than a purely local effect in the organism Structural defects of the kidneys, as they are found in pathologic conditions of these organs or are induced by experimental methods, are often accompanied by consequences which concern the performance of tissues remote from the site of obvious disease

An instance of what is here referred to is afforded by a recent investigation of the regulation of the blood volume after saline injections In this research, conducted by Bogert, Underhill, and Mendel[2] at Yale University, the investigators have made use of the characteristic return of the blood volume to its normal, after dilution in various ways, as the index of a representative response of the organism It is pointed out that the volume of the blood is one of the important constants of the body, the maintenance of which constitutes a condition of health With widely varying fluid intake, there must frequently be a tendency toward disturbance of this equilibrium and toward an alteration in the volume of the blood The mechanism by means of which a constant blood volume is maintained is, therefore, of very general physiologic interest

After a considerable dilution of the blood, for example by saline injection, the normal volume is ordinarily resumed with surprising promptness Following the introduction of a quantity of diluent equal to the calculated blood volume, the excess of fluid disappears from the circulation so rapidly that, in experimental animals, the original blood volume is usually restored within half an hour and often sooner One might naturally be inclined to assume that this prompt regulatory removal of fluid is due entirely to the excretory functions of the kidneys This is, however, by no means the case, for a comparable regulation proceeds even after ligation or exclusion of the kidneys so that they cannot take any part in the process Inasmuch as, even in the absence of renal function, a dilution of the blood is still efficiently counteracted, it must be assumed that the tissues play some part in the process Indeed, it seems clear now that the tissues act up to a certain limit as a reservoir for the excess of fluid, which later leaves the body gradually, and that the activity of the kidney plays only a small role in the immediate regulation of blood volume after intravenous injection of salt solutions

In conditions of nephritis, on the other hand, an inability of the organism to restore the blood volume with equal ease to the normal after saline injections usually manifests itself At any rate, incomplete or imperfect regulation in this respect has now been demonstrated in the case of individuals suffering from the nephritis induced by uranium salts,[3] by chromates[4] and by tartrates[2] This failure of fluid to leave the blood and pass into the tissues as rapidly in the nephritic as in the normal individual can scarcely be ascribed solely to the deficient excretory capacity of the kidneys, for it has already been pointed out that these organs are not immediately essential The Yale investigators believe that an alteration of the permeability of the blood vessel walls offers the only adequate explanation of the changed conditions prevailing in the nephritic subjects It is concluded, therefore, that the condition of nephritis effects an alteration of the permeability of the walls of the capillaries of the general circulation in such a way as to hinder the passage of fluid from the blood to the tissues. In this way nephritic conditions exert an influence quite remote from the damaged kidneys themselves.

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[2] Bogert L Jean Underhill, F P, and Mendel L B The Regulation of the Blood Volume after Injections of Saline Solutions Studies of the Permeability of Cellular Membranes I Am Jour Physiol 1916 xli 189 The Action of Saline Colloidal Solutions upon the Regulation of Blood Volume II ibid p 219 The Influence of Alkaline Saline Solutions upon the Regulation of *Blood Volume III* ibid p 229

[3] Boycott A E Jour Path and Bacteriol 1913 xviii, 11 ibid *1914* xviii *498*

[4] Chisholm Jour Path and Bacteriol 1914 xviii 532

RELATIVE VALUES IN PUBLIC HEALTH WORK

There is nothing more discouraging to a sincere worker than the realization that, because of meager information, or misinformation, his honest efforts may be misdirected. Certainly the authorities attempting to control the recent poliomyelitis epidemic have been conscious of this. To some degree, indeed, all workers for health preservation find a constant source of discouragement in the lack of accurate data on relative values in public health work. In view of the fact that from a fourth to a third of the deaths which occur in continental United States each year are preventable, no public health official can fail to realize that mistaken judgment on his part in the expenditure of the insufficient funds entrusted to him may mean lives needlessly lost. He has to face the problem of inadequate funds and possible political pressure for the misuse of those funds. Still more grave is the danger that, no matter how honest his own intentions, through lack of accurate information, he may still misuse his resources.

Public health protection is a new activity, there are comparatively few up-to-date reference books, and no one man can hope from his own experience to be able to grasp the whole field. In fact, the average health officer often lacks the specific training and length of tenure in his office which would justify him in depending on his own judgment. Such men particularly, and, indeed, all persons who are interested in original contributions to the scientific data on which all useful preventive medicine must be based, will therefore welcome the study of the "Relative Values in Public Health Work"[1] by Franz Schneider, Jr. Schneider, as the sanitarian of the Department of Surveys and Exhibits of the Russell Sage Foundation in New York City, has undertaken this analysis of relative values at a time when such a study is greatly needed. Schneider disclaims any high degree of accuracy for the conclusions which he offers. In the first place, the figures are based only on reports from cities in the registration area. These, unfortunately, include only about 35 per cent of the total population, and are entirely inadequate as to sickness statistics, but with proper allowance also for the fluctuation of values caused by local conditions, the figures offered are significant both for the originality and suggestiveness of method by which they were worked out, and as offering a sound foundation for a scientifically planned health program. The thesis is that with limited funds a proper choice of activities is of chief importance. The four prime factors by which may be determined the relative value of activities directed against disease are the amount of damage the disease causes, its preventability, the cost of its prevention, and its tendency to become epidemic. Judged by all these criteria, and only in reference to their relative value as causes of death, the following preventable diseases are rated thus:

RATING OF PREVENTABLE DISEASES

Tuberculosis	16.9
Infants diseases (including diarrhea, enteritis and bronchopneumonia)	33.9
Contagious diseases of children	30.5
Venereal diseases	9
Typhoid fever	6.1
Other infectious diseases	3.4
Nutritional diseases	.2
Total	100

There are certain activities indispensable to a health department, although they may only indirectly affect the death rate from these diseases. Such activities are health education, the physical examination of schoolchildren, the recording of vital statistics, and the maintenance of dispensaries, clinics and laboratory facilities. The foregoing figures, corrected by making an allowance for these activities and for other factors omitted in the first rating, are altered so as to indicate, as in the following table, the final values of health department activities.

FINAL VALUES OF HEALTH DEPARTMENT ACTIVITIES

Control of tuberculosis	12.1
Control of venereal diseases	6.6
Control of all other communicable diseases	25.3
Infant hygiene	20.3
Privy and well sanitation	3.5
Milk control	2.7
Fly and mosquito suppression	2.4
Food sanitation	.1
Inspection of schoolchildren	7
Vital statistics	5
Education	5
Dispensary and clinics	5
Laboratory	5
Total	100

Figures of this kind stimulate the reader to instant questions, but it is because of the careful explanations and painstaking justification of the values given that the report is well worth careful study.

THE ALCOHOL-URIC ACID QUESTION

The answer to the question as to what constitutes a food is becoming more complicated with the development and expansion of our knowledge of metabolism and nutrition. A few years ago the method to be pursued in finding the solution to such a query seemed clear. It was merely necessary to ascertain whether the substance in question could yield energy, not merely in a laboratory apparatus but also in the living organism. The reservation here indicated was necessary for the reason that many substances, which will burn up outside of the body to furnish heat and work, do not digest when ingested by the organism itself, and hence cannot enter the tissues proper to participate in metabolism, or they may be positively toxic, despite owing to the atypical form in which it manifests itself Here again, as so often in recent years, the unsuspected carrier has seriously complicated the problems of preventive medicine

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[1] Schneider, Franz, Jr.: Relative Values in Public Health Work, read before the Massachusetts Association of Boards of Health, Providence, R. I., July, 1916; Am. Jour. Pub. Health, September, 1916.

In view of the current divergence of opinion, which represents in reality a lack of dependable observations, on the efficiency of the vaccine treatment, the report from the New York health experts deserves serious consideration We are told that pertussis vaccines, as prepared by the bureau of laboratories, when given early, have continued to give good curative and prophylactic results at the whooping cough clinic and in the hands of a large number of private practitioners and health officers The very small number of deaths under vaccine treatment and the vast crowds who apply for treatment at the clinic indicate a favorable and possibly tangible influence of the specific treatment on the further epidemiology of the disease [1]

In addition to the obvious measures which our present knowledge suggests to reduce the morbidity and mortality of whooping cough, especially in very young children, it is suggested that quarantine should extend during the first two weeks of the disease Luttinger advises the establishment of more whooping cough clinics and the organization of boat camps, where possible, during the summer time for the rational treatment of pertussis He also advocates the use of a suitably constructed pertussis hospital, in which the care of patients with severe attacks of whooping cough could be more efficiently undertaken and which would afford an opportunity for further scientific research on laboratory as well as clinical lines If to these measures are added the education of the public [illegible] beverages awakening of the medical [illegible]," as the advertisements in the [illegible] sometimes have us believe, its nutritive value must be scientifically established before the statement can be accepted

The chief mainstay of the defenders of alcohol as a possible food has been the demonstration that small, though not insignificant amounts of alcohol may replace carbohydrate or fat, with an equivalent protein-sparing action [2] It has been stated in reply, however, that in many cases this effect did not appear until some time after the substitution of alcohol for one of the other nutrients in the diet Despite the characteristic protein-sparing action of moderate doses of alcohol, it has been found by a number of investigators, more recently by Mendel and Hilditch,[3] that the addition of alcohol to the diet results in an increased excretion of uric acid If this is to be regarded merely as a normal response to a nutrient stimulus, little exception can be taken to such a reaction, but if it represents a pharmacodynamic effect,

University, the investigators have made use of the characteristic return of the blood volume to its normal, after dilution in various ways, as the index of a representative response of the organism It is pointed out that the volume of the blood is one of the important constants of the body, the maintenance of which constitutes a condition of health With widely varying fluid intake, there must frequently be a tendency toward disturbance of this equilibrium and toward an alteration in the volume of the blood The mechanism by means of which a constant blood volume is maintained is, therefore, of very general physiologic interest

After a considerable dilution of the blood, for example by saline injection, the normal volume is ordinarily resumed with surprising promptness Following the introduction of a quantity of diluent equal to the calculated blood volume, the excess of fluid disappears from the circulation so rapidly that, in experimental animals, the original blood volume is usually restored within half an hour and often sooner One might naturally be inclined to assume that this prompt regulatory removal of fluid is due entirely to the excretory functions of the kidneys This is, however, by no means the case, for a comparable regulation proceeds even after ligation or exclusion of the kidneys so that they cannot take any part in the process Inasmuch as, even in the absence of renal function, a dilution of the blood is still efficiently counteracted, it must be assumed that the tissues play some part in the process [illegible] even the greater part of the increase in uric [illegible] excretion recorded by Mendel and others, when they added alcohol to the diet, was due to increased caloric intake He points out, in the first place, that the amount of alcohol ingested by Mendel's subjects was nearly 40 per cent more than that consumed in the experiments detailed above This would lead to a more pronounced pharmacodynamic action In the second place, the subjects used by Mendel were not accustomed to the use of alcohol as a beverage, and hence might be expected to react to a greater extent than would Hammett's subjects, from whose continuous though mild use of alcohol the development of a tolerance might be assumed

Hammett's deduction from his investigation is conservative Comparing his results with the widely quoted statement of Mendel and Hilditch[3] that "even in the 'moderate' doses used alcohol increases the output of uric acid" in man, he says that it is indicated that several factors contribute to the effect of alcohol on uric acid excretion, and that in the light of our present knowledge we can make no statement as to the relative importance of any of these factors, much less explain their action

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[1] For a review of this subject see Mendel L B Nutrition and Growth The Journal A M A May 8 1915 p 1539 Underhill F P Physiology of the Amino Acids New Haven 1916

[2] Physiological Aspects of the Liquor Problem Boston 1903 ii 169 Rosemann E Oppenheimer s Handbuch der Biochemie 1909 1911 iv Part i 413

[3] Mendel L B and Hilditch W W Am Jour Physiol 1910 1911 xxvii 1

[4] New Evidence Against Alcohol editorial The Journal A M A March 4 1916 p 742

[5] Hammett, F S The Effect on Nitrogen Partition of Substituting Alcohol for Sucrose in an Otherwise Fixed Diet Jour Biol Chem 1916 xxv 601

Current Comment

EXPOSURE TO COLD AS A CAUSAL FACTOR IN DISEASES OF THE RESPIRATORY TRACT

While it is generally admitted that most diseases of the respiratory tract are of bacterial origin, it has not been wholly determined whether or not the sudden exposure of the whole or part of the body to marked changes of temperature predisposes to various infections Chodounsky[1] in 1907 experimented with the effects of various bacilli on the lower animals and also made repeated studies on his own person He was 57 years of age, subject to catarrh, to frequent attacks of bronchitis and to lumbago He exposed himself naked to cold air and drafts at temperatures from 3 to 12 C for periods of time varying from twenty minutes to one hour, immediately after cold or hot baths Exposure to cold he concluded was not a causal factor in diseases of the respiratory tract Yet considerable evidence has accumulated in support of the opposite view Lipari,[2] Lode,[3] Pasteur,[4] and Kline and Winternitz,[5] experimenting variously with infected animals, are all in accordance with the general conclusion that exposure to sudden changes of temperature lessens the resistance of animals to infection The New York State Commission on ventilation[6] reported the results of a clinical study of nearly 150 men subjected to sudden changes of temperature It was concluded that such changes may be a factor in the causation of acute colds Lately, J A Miller and W C Noble,[7] working under the auspices of the same commission, have added some important data still further supporting this view They infected a number of rabbits with *Bacillus bovisepticus* This organism produces a general septicemia at times, but in some cases it is localized in the upper respiratory passages, in which it produces a condition commonly known as snuffles and may terminate in pneumonia with or without septicemia Thirty-seven rabbits were kept in an incubator at varyingly high temperatures for different periods of time They were then infected by spraying the nasal mucous membrane with saline suspension of *Bacillus bovisepticus,* after which they were exposed to cold for periods of from one-half to three hours The animals were also wet with water to facilitate chilling Both the mortality and morbidity were greater in the exposed animals than in a like number of controls maintained under normal conditions The same general results were obtained when the animals were exposed to several changes of temperature, and the effect was even more marked when they were subjected to heat after exposure to cold Although positive conclusions cannot be drawn from animal experimentation along this line, taken in conjunction with the results of several of the clinical studies, there is sufficient evidence from which to draw certain practical, working conclusions The importance of the outdoor treatment of pulmonary tuberculosis and many other conditions is well established It must not be forgotten, however, that the resistance of many of these patients to various infections is low They should not be subjected suddenly to violent extremes of temperature, and proper precautions should always be taken against chilling of the body surfaces It seems evident that the exposure of a portion of the body to cold is more likely to be followed by acute respiratory infections than when the entire body surface is subjected to the same low temperature, and the popular idea that drafts predispose to respiratory infection in some individuals is therefore not without foundation

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[1] Chodounsky K Erkaltung und Erkaltungskrankheiten Vienna 07

[2] Lipari G Morgagni 1888 xxx 523 575 651

[3] Lode A Arch Hyg 1897 xxviii 344

Vallery Radot R The Life of Pasteur New York 1902 ii 61

Kline B S and Winternitz M C Jour Exper Med, 1915

ld in the Head editorial The Journal A M A April 15

James A, and Noble Willis C Effects of Eposure to Infection of the Re piratory Tract Jour Exper 916 p 223

THE SUPRARENALS AND POLYCYTHEMIA

Last year Lamson[1] of the Pharmacologic Laboratory at the Johns Hopkins University called attention to the fact that, contrary to the customary assumption, the number of red corpuscles per unit volume of blood is not constant, but is subject to rapid and by no means negligible changes, indeed it is continually changing under physiologic conditions It appears that the "red count" is under nervous control The number of erythrocytes is reported to increase after emotional excitement, such as fear or rage Several important facts have been brought out in relation to acute experimental polycythemia This condition can be provoked very promptly by injections of epinephrin By a series of ingenious experiments Lamson[2] has found it more than probable that the liver is the organ responsible for the changes in the number of red cells induced in this way Polycythemia will not take place unless the liver is connected with the circulation The process by which the liver increases the number of erythrocytes is thought to be a loss of plasma from the liver capillaries, together with a constriction of these vessels driving the erythrocytes on into the blood stream It has been experimentally shown that the liver capillaries constrict with epinephrin, causing a sudden diminution in size of the liver What is the normal mechanism in the body for regulating the sudden changes in the red corpuscle content of the blood? It obviously is under nervous control and responds to nervous, chemical and emotional stimuli A direct nervous influence, however, can scarcely be at work, for stimulation of the nerves to the liver causes no increase in the number of erythrocytes, according to the new observations of Lamson[3] Furthermore, in animals in which epinephrin causes no polycythemia, nervous stimuli also cause no increase in the red blood count It seems probable, therefore, to Lamson that the polycythemia following the stimulation of certain their combustibility Cellulose readily yields heat in the bomb calorimeter, but it passes through the alimentary tract of man unchanged Its energy is not available, as the student of metabolism expresses it Strychnin is another organic compound which can easily be burned in a crucible, but it is too toxic for its energy-yielding capacity to be considered

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[1] Lamson P D The Role of the Liver in Acute Polycythaemia The Mechanism Controlling the Red Corpuscle Content of the Blood Proc Nat Acad Sc 1915 i, 521

[2] Lamson P D Jour Pharmacol and Exper Therap 1915 vii 169

[3] Cf Lamson P D The Processes Taking Place in the Body by Which the Number of Erythrocytes per Unit Volume of Blood is Increased in Acute Experimental Polycythaemia Proc Nat Acad 1916 ii 365

Nowadays the food question is further complicated by the recognition of the unlike value of different proteins in nutrition,[1] and by the accepted need of food hormones or vitamins which play a role independent of any energy which they can yield Popular enthusiasm for these more subtle and little understood factors in nutrition is now in the ascendant to a degree that may make it necessary soon to sound a reactionary warning It is detrimental, if not dangerous, to permit the momentary interest in a new discovery to overshadow the importance of older well recognized facts Energy is an indispensable feature of the body's needs, even if the repetition of the caloric aspects of nutrition tends to seem trite Dietary preparedness can never be adequate with neglect of the energy problem

The ever recurring debate on the use of alcohol invariably meets the question, sooner or later, as to whether or not alcohol in any dose can be a food There can be no issue in the matter so long as one refers to doses of alcohol that are obviously toxic When the detrimental effects of alcohol overshadow every possibility of latent nutrient virtue, discussion becomes unnecessary The uncertainty of interpretation arises in connection with so-called moderate doses or among the moderate users of alcoholic b[illegible] If "beer is merely liquid bre[illegible] the public and the [illegible]edical profession [illegible] beverages would [illegible] matter, there is eve[illegible]ad," as the advertisements inroad on the [illegible] sometimes have us believe, its nutritive value must be scientifically established before the statement can be accepted

The chief mainstay of the defenders of alcohol as a possible food has been the demonstration that small, though not insignificant amounts of alcohol may replace carbohydrate or fat, with an equivalent protein-sparing action[2] It has been stated in reply, however, that in many cases this effect did not appear until some time after the substitution of alcohol for one of the other nutrients in the diet Despite the characteristic protein-sparing action of moderate doses of alcohol, it has been found by a number of investigators, more recently by Mendel and Hilditch,[3] that the addition of alcohol to the diet results in an increased excretion of uric acid If this is to be regarded merely as a normal response to a nutrient stimulus, little exception can be taken to such a reaction, but if it represents a pharmacodynamic effect, one might seriously question the propriety of speaking of alcohol as a typical food in any sense, even if it burns up easily in the body

The significance of "moderate" doses of alcohol has again come into prominence through the new investigations at the Carnegie Nutrition Laboratory in Boston indicating detrimental psychologic effects from rather small quantities[4] It is a merit of modern studies in this field that they have been undertaken in a purely objective spirit and without the latent prejudice that almost inevitably attends the promotion of a propaganda, even for good In this spirit of scientific impartiality, attention is directed to a recent investigation by Hammett[5] in the Medical Department at the University of Southern California He has determined the effect, on the nitrogen partition in the urine, of substituting isodynamic quantities of alcohol for sucrose during an otherwise fixed diet in man The alcohol was given in the form of rum, 40 c c (1⅓ ounces) at each of the three daily meals in place of 30 gm (1 ounce) of sucrose, and yielding about 370 calories a day The substitution produced no significant changes whatever in urinary nitrogen partition, in particular, the output of uric acid remained unaltered The subjects were accustomed to the moderate use of alcoholic beverages

Increased ingestion of foods — particularly of proteins — may augment temporarily the elimination of endogenous uric acid to a small extent Hammett remarks that his results do not necessarily indicate that all [illegible] indeed it seem[illegible] that th[illegible] uric acid [illegible] even the greater part of the increase in uric acid excretion recorded by Mendel and others, when they added alcohol to the diet, was due to increased caloric intake He points out, in the first place, that the amount of alcohol ingested by Mendel's subjects was nearly 40 per cent more than that consumed in the experiments detailed above This would lead to a more pronounced pharmacodynamic action In the second place, the subjects used by Mendel were not accustomed to the use of alcohol as a beverage, and hence might be expected to react to a greater extent than would Hammett's subjects, from whose continuous though mild use of alcohol the development of a tolerance might be assumed

Hammett's deduction from his investigation is conservative Comparing his results with the widely quoted statement of Mendel and Hilditch[3] that "even in the 'moderate' doses used alcohol increases the output of uric acid" in man, he says that it is indicated that several factors contribute to the effect of alcohol on uric acid excretion, and that in the light of our present knowledge we can make no statement as to the relative importance of any of these factors, much less explain their action

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[1] For a review of this subject see Mendel L B Nutrition and Growth THE JOURNAL A M A May 8 1915 p 1539 Underhill F P Physiology of the Amino Acids New Haven 1916

[2] Physiological Aspects of the Liquor Problem Boston 1903 ii 169 Rosemann, E Oppenheimer s Handbuch der Biochemie 1909 1911 iv Part i 413

[3] Mendel L B and Hilditch W W Am Jour Physiol 1910 1911 xxvii 1

[4] New Evidence Against Alcohol editorial, THE JOURNAL A M A March 4 1916 p 742

[5] Hammett F S The Effect on Nitrogen Partition of Substituting Alcohol for Sucrose in an Otherwise Fixed Diet Jour Biol Chem 1916 xxv 601

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[2] Lipari G Morgagni 1888 xxx 523 575 651

[3] Lode A Arch Hyg 1897 xxviii 344

[4] *Vallery Radot R The Life of Pasteur New York 1902* ii *61*

[5] Kline, B S and Winternitz M C Jour Exper Med 1915 xxi 304

[6] Cold in the Head editorial The Journal A M A. April 15 1916 p 1201

[7] Miller James A and Noble Willis C Effects of Eposure to Cold on Experimental Infection of the Respiratory Tract Jour Exper Med Sept 1 1916 p 223

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[1] Lamson P D The Role of the Liver in Acute Polycythaemia The Mechanism Controlling the Red Corpuscle Content of the Blood Proc Nat Acad Sc 1915 i 521

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nerves is not due to a direct nervous influence, but to a reflex stimulation of the suprarenals, and a secondary action of epinephrin on the liver Thus the burden of one more regulatory function in the ever responsive organism is laid at the feet of the suprarenal gland mechanism It helps to explain the observation that removal of the suprarenals excludes the manifestation of polycythemia in rage, fear or asphyxia, although even suprarenalectomized subjects respond to the injection of epinephrin by the characteristic increase in the number of red cells Furthermore, removal of the suprarenals is soon followed by a complete loss of functional control of the number of erythrocytes in a unit volume of blood

THE BLOOD PRESSURE IN PNEUMONIA

The development of accurate methods of investigation in clinical medicine and the expression of the results in terms of definite quantitative measurements have served to dispel many of the long current assumptions that had little more than a traditional probability to support them In the descriptions of pneumonia, for example, one reads of sudden collapse of the circulation, with weakness and irregularity of the heart and the pulse, the low blood pressure, subnormal temperature, and other attendant symptoms These have been ascribed to "toxic paralysis of the vasomotor centers, toxic degeneration of the myocardium, and excessive pressure in the pulmonary circulation" The long held belief that the toxins of pneumonia specifically injure the vasomotor apparatus has been clearly disproved by Porter and Newburgh[1] Even in fatal cases, in animals about to die with almost wholly consolidated lungs, the vasomotor reflex commonly remains normal Further studies by these investigators[2] at the Harvard Medical School indicate that the blood pressure in experimental pneumonia is frequently somewhat less than normal, but, in their experience, has never been so low as to endanger life This corresponds with the observations by Newburgh and Minot[3] of blood pressure in pneumonia in the wards of the Massachusetts General Hospital and the Johns Hopkins Hospital It was found that the average of the readings taken morning and afternoon during the course of the disease was from 110 to 120 mm of mercury The normal for human beings of corresponding age is 120 to 130 mm The lowest observed pressure was 90 mm, with three cases at 100 mm Taken in their entirety the now known facts, clinical and experimental, indicate that the blood pressure in pneumonia does not serve the same prognostic value that was formerly attributed to it when the dictum prevailed that persons likely to die of this disease would have a low or falling pressure days before the fatal issue

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[1] Porter W T and Newburgh L H and I Boston Med and Surg Jour, 1914 clxx 125 The State of the Vasomotor Apparatus in Pneumonia Am Jour Physiol 1914 xxxv 1

[2] Newburgh L H and Porter W T The Blood Pressure in Experimental Pneumonia Am Jour Physiol 1916 xli 384

[3] Newburgh L H and Minot G R *Arch Int Med* 1914 xiv 48

A Smiling Countenance**—***It is the mark of a skilled practitioner to sit a while by the bedside, with a blithe countenance*—Celsus

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH ETC)

COLORADO

Personal—Dr Charles D Rilance, Denver, sailed on the *Noordam* September 23, to join the Convalescent Hospital at Bath, England

Consolidation of Medical Departments—A consolidation of the surgeons in the police department and the health department of Denver has been effected so that all the medical officers will work under one jurisdiction, responding both to ambulance calls and to poor and public service cases

Sanitary Expert Visits Denver—Surgeon Carroll Fox, U S P H S, is in Denver on invitation of the state survey commission and the state board of health to investigate the sanitation in the cities and rural districts of Colorado, the water supply and milk supply, the health laws of the state, and the facilities for fighting epidemics at home

CONNECTICUT

Silliman Lectures—The Silliman lectures at Yale University for 1916 were delivered by Dr J S Haldane at the Lampson Museum, October 9, 10, 12 and 13, at 5 p m, on "Organism and Environment as Illustrated by the Physiology of Breathing"

Yale Health Board Organized—Yale University announces the organization of a university board of health, with Dr James C Greenway, New Haven, as university health officer The board will be made up of the several deans, the professor of public health in the school of medicine, the professor of hygiene in the scientific school, the treasurer of the university, the director of the gymnasium, and the chairman of the athletic committee

Pathologist Resigns—Dr Jessie W Fisher, pathologist at the Connecticut Hospital, Middletown, for several years, has resigned to accept the position as pathologist of the Middlesex Hospital, Middletown She will also be in charge of the new laboratory at that institution and will be pathologist of the Cromwell Hall Sanatorium The vacancy on the Connecticut Hospital staff has been filled by the appointment of Dr Arthur S Gibson, Boston

GEORGIA

Medical Defense Department Organized—The Medical Defense Department of the Medical Association of Georgia met in Augusta September 9, for organization and elected Dr Mallie A Clark, Macon, chairman, Dr William C Lyle, Augusta, secretary, and Col M L Felts, Warrenton, general counsel

Building Given to Emory University—Bishop Candler, chancellor of Emory University announces the receipt of a contribution of $50,000 from J J Gray, Jr, Rockdale, Tenn for the erection of an outpatient building in conneciton with the medical department of Emory University, the building to be known as the J J Gray Clinic

Personal—Mr Barnett Cohen, assistant in the laboratory of the Savannah Health Department, has resigned to accept a position in the department of public health of Yale University, New Haven, Conn——Dr Emory R Park Atlanta, has resigned from the state board of health——Dr Robert E McClure, Macon, has been elected superintendent of the State Tuberculosis Sanatorium, Alto succeeding Dr William V Parramore, Alto, resigned——Dr Walpole C Brewer has been appointed a member of the board of health of Atlanta——Dr William C Lyle has resigned the management of the University Hospital, Augusta——Dr Lamartine G Hardman, Carrollton, is a candidate for governor of Georgia——Dr Henry M Michel, Augusta, will remain in France until the end of the war——Dr William R Houston, Augusta, who has been in charge of a large hospital at Lyons, France, has returned to this country——Dr Robert C Goolsby, Forsyth, announces his candidacy for representative of the General Assembly——Dr John A White, Augusta, has been elected commissioner of health for Dougherty County

ILLINOIS

To Study Poliomyelitis—In anticipation of an epidemic of poliomyelitis next summer, the Illinois State Board of Health has arranged for a number of conferences on the subject at different points in the state during the winter months

Charities and Correction—The twenty-first annual state conference of Charities and Correction will be held at Alton, October 20 to 22 The chief subjects for discussion are, children, rural social service, mental and physical efficiency the family and its needs probation and prevention of crime, and labor and compensation

Chicago

Life Extension Institute—The Life Extension Institute of New York City it is reported has arranged to open a branch office in Chicago

Memorial Meeting for Dr John B Murphy—October 11 was observed by the Chicago Medical Society as Dr John B Murphy memorial night The following were announced as speakers Drs George W Crile Cleveland, C A L Reed Cincinnati Frank Billings L L McArthur E Wyllys Andrews, D A K Steele A D Bevan, W E Quine, A J Ochsner, Jacob Frank and W A Evans, Chicago

Personal—Dr Dwight C Orcutt has been appointed ophthalmic surgeon at the Illinois Charitable Eye and Ear Infirmary, succeeding Dr Oscar Dodd resigned——Dr Albert H Roler, Evanston has been appointed, by the secretary of state assistant at the American Embassy in Berlin, his duties being to inquire into and report on the condition of British prisoners in Germany and German prisoners in Russia Dr Roler sailed for Berlin October 12, via Denmark——Prof Roy G Hoskins formerly associate professor of physiology of Northwestern University Medical School, has been appointed professor and head of the department of physiology in that school

IOWA

Clinical Society to Meet—The Iowa Clinical Medical Society will hold its next meeting at the Iowa City University Medical School, Iowa City December 2

Personal—Dr Donald Macrae, Jr Council Bluffs, has been placed in charge of the Brownsville (Texas) Base Hospital——Dr Ralston W Sleeter has been appointed local surgeon at Rockford for the Rock Island System——Dr Hugh Mullarky, Manson has been nominated as the Demo cratic candidate for state senator——Dr William E Owen, Cedar Rapids, was elected vice president of the Iowa State Cymrodorian Society at its meeting in Iowa City September 8——Dr Merle Bone has resigned as house physician at the Miners Hospital, Albia and has been succeeded by Dr Isaac H Odell Albia

KANSAS

Car for Health Exhibit—Mr Robert Lincoln chairman of the board of directors of the Pullman Company, has presented a car to the Kansas Department of Health to be used for the public health child hygiene and propaganda exhibit of the board

Personal—Dr Newton A Seehorn Hutchinson, has been appointed physician at the State Reformatory, succeeding Dr Frederic A Forney Hutchinson resigned——Dr William E Michener Ottawa has succeeded Dr Charles E Buckley Ottawa resigned as secretary of the Franklin County Medical Society The society in accepting the resignation adopted a set of resolutions complimentary of Dr Buckley and presented him with a gold watch charm

MARYLAND

Personal—Dr Allen K Krause former head of the Trudeau Sanatorium at Saranac Lake N Y has arrived at Johns Hopkins Hospital to assume general charge of the Phipps Tuberculosis Dispensary and to direct the work in this department, made possible by the recent gift of Mr Kenneth Dows New York Dr Krause has not completely severed his connection with Trudeau Sanatorium but will return there each summer for four months His connection with the two institutions will link together the work done at both places

The Infantile Paralysis Situation—A number of new cases having been reported to the city and the state departments of health Health Commissioner Blake has deferred the opening of the kindergarten and six lower school grades These cases are scattered through all parts of the city and the various counties In a number of instances, the disease has not been recognized promptly and that, in part, accounts for this spread Children under 16 years of age are no longer required to obtain certificates to leave the city, but the health officials of New York, New Jersey and Pennsylvania have been notified that all children under 16 years must have health certificates before coming to Baltimore and these will be quarantined for fourteen days Several cases have developed here shortly after children have arrived from other states——The United States Public Health Service has issued an order withdrawing its forces from Baltimore, but has recommended that no let-up be made in the quarantine regulations——Dr James R Hurley and Dr C H Waring of the U S P H S have been recalled to Washington and Dr Joseph R Ridlon has been ordered to Tampico, Mexico, to investigate sanitary conditions

Ordinance for the Pasteurization of Milk Urged—On account of the minor epidemic of typhoid fever during the last few months the cause of which has been traced to unpasteurized milk the health department is making an effort to have the city council pass an ordinance requiring the pasteurization of all milk sold in Baltimore The Milk Bottlers Exchange is cooperating with the health department and has adopted resolutions urging immediate action on the part of the city council A series of meetings in the interest of the pasteurization of milk is to be held during the autumn and it is said that the proposed ordinance will be generally indorsed and passed with no opposition It developed that the state agricultural board recently appointed, has the power to order the pasteurization of all milk sold in Maryland in the towns and villages as well as in the large cities The board is already interested in a plan with this end in view and the statement has been made that it would back any ordinance passed by the city council or any regulation Dr Blake adopted——The monthly report of the health department, issued recently showed 189 cases of typhoid fever were reported in September three more than last year Twenty died from the disease, compared with twenty-two a year ago

MASSACHUSETTS

Hospital Soon to be Opened—The Beth Israel Hospital, located at 45 Townsend Street Roxbury Boston, the first Jewish institution of its kind in Boston, will be formally dedicated October 22 The hospital although a Jewish institution, will not be restricted to any creed or color so long as the Jewish dietary laws are upheld

Free Choice of Medical Attendance for Working Men—A meeting of committees of five of the various district societies was held in Worcester September 20, to consider and plan a movement looking to the amendment of the Workmen s Compensation Act which will allow injured employees freedom of choice of medical attendance

Personal—Dr Beatrice H Brickett Newton Highlands has been appointed superintendent and resident physician of the Massachusetts Women s Hospital Parker Hill Roxbury Boston, succeeding Dr Edith M Brooks who after a period of twelve years in charge of the hospital resigned this summer——Dr Thomas H Kenney has been elected a member of the board of health of Northampton

Harvard and Poliomyelitis—Harvard Medical School has established a commission to assist in the early recognition treatment and study of infantile paralysis The commission consists of Dr Robert W Lovett chairman, Drs Milton J Rosenau and Francis W Peabody Boston and Mr Roger Pierce as secretary of the commission The commission will work in close cooperation with the state department of health and the local health authorities

Poliomyelitis—Surg Lumsden D Fricks U S P H S has reported for duty at Boston with the state board of health, and has gone to Holyoke where infantile paralysis has obtained a strong hold to give assistance to the local authorities and to make a health survey——On the recommendation of the governor, the legislature has passed the Bates bill which allows local boards of health to establish quarantine when an epidemic of infantile paralysis is threatened——Up to September 27 523 cases of poliomyelitis had been reported to the state health department, or about double the number of cases reported in August

Ether Day—The seventieth anniversary of Ether Day will be celebrated at the Massachusetts General Hospital, October 16 The exercises will be held at 4 p m in the Moseley Memorial Building which has been recently completed and was erected as a memorial to William Oxnard Moseley, a house pupil at the Massachusetts General Hospital in 1878 After introductory remarks and presentation of diplomas by Dr Henry P Walcott, Boston, president of the corporation and chairman of the board of trustees, there will be an address by Dr Herbert Burr Howard, superintendent of the Peter Bent Brigham Hospital, followed by the Ether Day address by Dr Haven Emerson, commissioner of health of New York

Faculty Changes in Harvard—Drs Abraham Myerson, Farrar Cobb, Frederic Jay Cotton, William Edward Faulkner, Joshua Clapp Hubbard, Daniel Fiske Jones and Fred Bates Lund have been appointed associates in Harvard Medical School for one year, Dr Horace David Arnold has been appointed director, Dr Alexander Swanson Begg, dean, and Drs Edward Hickling Bradford, George Gray Sears, Algernon Coolidge, Charles Locke Scudder, Milton Joseph Rosenau and Francis Weld Peabody, members of the administrative board of the Graduate School of Medicine of Harvard University——The Harvard corporation has made the following appointments Dr Charles W McClure, alumni assistant in medicine, Dr Andrew Watson Sellards, associate in tropical medicine, Dr George B Magrath, instructor in legal medicine, Dr Le Roi Goddard Crandon, assistant in surgery, Dr Francis Gorham Brigham, assistant in medicine, Dr Frederic Codman Cobb, associate in laryngology, Dr Charles Locke Scudder, assistant professor of surgery, Dr Harris Peyton Mosher, instructor in anatomy, Dr David Cheever, associate in surgery, Dr Samuel Walker Ellsworth, assistant in roentgenology, Dr Peter Hunter Thompson, clinical assistant in ophthalmology, Drs Joseph Maria Thuringer and Paul Eugene Lineback, assistants in histology and embryology, and Dr William Richard Ohler, Austin teaching fellow in bacteriology

MINNESOTA

Outing for Crippled Children—The tenth annual outing for children from the State Hospital for Crippled and Deformed Children, given by Dr and Mrs Arthur J Gillette St Paul, at their summer home, Dellwood, White Bear Lake, occurred September 12, when 100 children from the home [illegible]e taken to the lake by automobiles, entertained with mov-[illegible]ictures and then taken for trips on the lake and for [illegible]er in the Gillette residence

[illegible]arities and Correction—The Minnesota Association of [illegible]rities and Correction opened its annual conference in the [illegible]st Presbyterian Church, Stillwater, September 23, and continued in session until September 26 Dr Robert M Phelps, St Peter, is president of the conference, and among topics for discussion were "Criminology and Its Alliance With Mental Defectives", Providing for the Mentally Defective Child," and "Standards in Child Placement"

Personal—Dr William H Hengstler, Osakis, has disposed of the Park Region Hospital, Osakis, to Dr Emil Haberman, Minneapolis, and expects to locate in Portland, Ore, next spring——Dr Horace H Witherstine has been elected president of the newly organized antituberculosis society of Rochester——Dr Adrien J Kirghis, Sauk Center, has returned after several months' service in the French war hospitals——Dr Carl F Raver, Mankato, has been placed in charge of the Mankato laboratory of the state board of health

Health Safeguards—The governor has appointed a commission composed of the following members to investigate and report on the need of additional health safeguards for the citizens of the state Dr E P Lyon, dean of the University of Minnesota, Medical School, Minneapolis, C G Schulz, superintendent of the state department of education, William F Houk, state labor commissioner, C J Swendsen, chairman state board of control, Senator L E Potter, Springfield, Drs Arthur T Laird, superintendent of the Nopeming Sanatorium, Louis B Wilson, Rochester, Warren L Beebe, president, and Ignatius J Murphy, St Paul, executive secretary of the Minnesota Public Health Association At the meeting for organization, held September 20, in St Paul, Dr E P Lyon was elected chairman, and Dr Ignatius J Murphy, secretary of the commission

MISSOURI

Personal—Dr Herman E Pearse has been elected president of the staff of the Kansas City General Hospital, succeeding Dr Jefferson D Griffith, retired——Dr Charles R. Woodson, St. Joseph, entertained nearly 100 members of the Buchanan County Medical Society at dinner at the Woodson Sanitarium, September 16

St Louis

Care for Families of Militiamen—Cooperating with the National Militiamen's Association, the members of the St Louis Medical Society have given medical and surgical service to about sixty families In addition St Mary's Infirmary, St John's, St Louis Mullanphy, St Anthony's, Jewish, Alexian Brothers, Mt St Rose, Barnes, St Luke's, Deaconess and Lutheran hospitals, the Missouri Baptist Sanitarium and St Ann's Maternity have volunteered to accommodate members of the militiamen's families free of charge

NEW HAMPSHIRE

Society Meeting—At the annual meeting of the Dover Medical Society at Rochester, September 8, the following officers were elected president, Dr Thomas J Morrison, Somersworth, vice president, Dr John H Bates, East Rochester, and secretary, Dr Roland J Bennett, Dover

NEW YORK

State Plans After-Care of Infantile Paralysis—Dr Linsly R Williams, Albany, deputy state commissioner of health, has announced a comprehensive plan for the after-care of infantile paralysis patients He announces that Dr Robert W Lovett, Boston, will cooperate with the state health department, and that clinics will be held in various places throughout the state where persons who have had the disease may come for advice and treatment

Personal—Dr Herbert H Smith, Cape Vincent, has been appointed physician in charge of the Jefferson County Tuberculosis Hospital, Watertown——On account of the reduction in the number of cases of infantile paralysis, Dr Frederick J Garlick, Rochester, has been relieved of duty as expert diagnostician for the state department of health——Dr John Van Duyn, Syracuse has returned after several months' service in France——Dr Guy H Turrell, Smithtown Branch, has been appointed sanitary supervisor in the state department of health

New York City

Federal Inspection of Infantile Paralysis Ends—The federal inspection of interstate travel, which was instituted last July in this city, was discontinued, October 4 The number of new cases of infantile paralysis reported on that date was twelve with eight deaths That represents a fair average of the number of new cases reported each day during the week

Gifts to Columbia—At a recent meeting of the trustees of Columbia University, a number of gifts were announced, among which were an additional contribution of $7,000 toward the proposed new building for the dental school, $5,000 from Clarence H Mackay to be added to the fund for surgical research, and $1,000 from Willard V King to be applied to the medical school removal and rebuilding

Health Library for City—The Municipal Reference Library, which is in the Municipal Building, will establish a public health division on the fifth floor of the Health Department Building It will specialize on child hygiene, drugs, food analysis, food inspection, food regulations, food supply, hospitals, health insurance, milk supply, occupational hygiene, school inspection, contagious diseases and vital statistics This library will be open to the public

The Cartwright Lectures—The Cartwright lectures of the Association of the Alumni of the College of Physicians and Surgeons will be delivered at the College of Physicians and Surgeons, 437 West Fifty-Ninth Street, Tuesday and Wednesday afternoons, October 24 and 25, 1916, at 5 o'clock, by Dr Richard M Pearce, Jr, professor of research medicine, John Herr Musser Department of Research Medicine, University of Pennsylvania, Philadelphia His subject will be "The Spleen in Its Relation to Blood Destruction and Regeneration"

Personal—Dr Arthur M Jacobus has been appointed a member of the council of the New York Academy of Medicine to fill the place of Dr Adoniram Brown Judson, deceased——Dr James R. Hayden has resigned his professorship of urology at the College of Physicians and Surgeons of Columbia University——Dr James W Jameson has been appointed instructor in surgery at Columbia University and Dr Guy Alvin Caldwell and Dr Donald Gordan have been appointed instructors in clinical surgery——Dr Henry L Shively has been appointed professor of clinical medicine in the department of tuberculosis of Fordham University

Harvey Society Lectures—The twelfth course of Harvey Society lectures will begin October 14 and close April 7 The lectures will be given on Saturday evenings in the New York Academy of Medicine The following lectures are announced

October 14—Prof J S Haldane The New Physiology November 4—Dr F M Allen, The Role of Fat in Diabetes ' November 25—Dr Paul A Lewis Chemo Therapy in Tuberculosis' December 16—Prof Henry H Donaldson, Growth Changes in the Mammalian Nervous System" January 13—Prof E V McCollum, The Supplementary Dietary Relationships Among Our Natural Foodstuffs' February 3—Prof J W Jobling The Influence of Non Specific Substances on Infections ' February 24—Prof John R Murlin The Metabolism of Mother and Offspring Before and After Parturition' March 17—Prof Francis W Peabody Cardiac Dyspnea' April 7—Prof W H Howell, The Coagulation of the Blood'

Mental Hygiene Lectures—Six free lectures on mental hygiene are to be given during October and November at the Y M C A hall at 5 West One Hundred Twenty-Fifth Street, under the auspices of the city department of education The course has been arranged in cooperation with the mental hygiene committee of the State Charities' Aid Association The first lecture was given on October 11 when Mr Homer Folks spoke on 'Why Should So Many Go Insane?" Other lectures will follow October 18, 'The Social Cost of Mental Disease," by George A Hastings, October 25, "Preventable Mental Diseases and How to Prevent Them" by Dr Stewart Paton, Princeton, N J, November 1, "Social Hygiene as an Aid to Mental Health" by Dr Ira S Wile, November 8, How the Empire State Cares for 34,000 Insane," by Dr William Mabon, November 15, 'The Immigration Problem and Insanity," by Dr Henry Smith Williams

Quack Preventives and "Cures" for Infantile Paralysis—The department of health has succeeded in obtaining jail sentences and substantial fines as penalties in the case of two persons who attempted to exploit cures" for poliomyelitis in this city The first of these was a Mr Frooks who made and sold amulets to be worn around the neck as a protection against infantile paralysis An analysis made by the department of laboratories showed that the amulet consisted of a cotton bag containing cedar shavings The court found Frooks guilty and sentenced him to thirty days in jail and a fine of $250 James T Manchester was also sentenced to thirty days in jail for having manufactured and sold a preparation called 'Sol" which was represented as being a cure for infantile paralysis consumption, rheumatism and other ailments This preparation, on analysis, was found to consist essentially of capsicin, sassafras and alcohol

Supreme Court Upholds Health Department—Considerable newspaper publicity has been given the case of Mrs Anton Anderson, Jamaica, whose 19-months-old son was forcibly taken to the Queensborough Hospital for Contagious Diseases by officers of the health department The diagnosticians of the health department stated that the child had infantile paralysis, while a private physician differed in regard to the diagnosis The mother applied for a writ of habeas corpus and the case was taken to the supreme court, where it was dismissed, Judge Garretson holding that the board of health, in safeguarding the public health, is 'clothed with discretionary powers," and that it exercised these properly in forcibly seizing the child He vindicated Mrs Anderson however stating that she had shown a commendable readiness to comply with the law until confused by conflicting medical opinions The child was remanded for the full period of quarantine, eight weeks

OKLAHOMA

Hospital News—Work has commenced on the $80 000 addition to St Anthony's Hospital, Oklahoma City ——Hardy Hospital, Ardmore, has recently received gifts amounting to more than $53,000 from Robert Watchorn, at one time commissioner of emigration——Dr Loyal M Martin, Newkirk, has opened a hospital in that place

Personal—Dr Harry H Cloudman, Oklahoma City, has been reelected athletic director of the city high school——Dr Hugh L Scott formerly of the National Guard and more recently on duty in Mexico has been ordered to the Philippine Islands——Dr G Fowler Border, Mangum, mayor of that city has purchased the *Mangum Star* and the *Greer County Democrat* which will be consolidated and conducted hereafter under his editorship

PENNSYLVANIA

State Quarantine Lifted—Dr Samuel G Dixon state health commissioner, on October 2, lifted the quarantine that has been enforced for the last sixty days to prevent entrance into Pennsylvania of children under 16 years of age Under the direction of Dr Dixon more than 1,000 men have been engaged in watching over 100 miles of border It has been, it was admitted, the most effective and far reaching measure of its kind ever instituted in this state Cool weather is putting an end to the epidemic and makes quarantine no longer necessary, according to the statement of Dr Dixon The quarantine in New Jersey was lifted, October 4 Until October 5, the health reports show that 1,163 cases of infantile paralysis had been reported, beginning with July 1 Eight hundred and seventy-six of these occurred in Philadelphia Since July 1 414 deaths have occurred throughout the state from this disease

Philadelphia

Personal—Dr Gwilym G Davis, professor of orthopedic surgery at the University of Pennsylvania has been elected to membership in the executive committee of the North American Children s Sanatorium, to fill the vacancy caused by the death of Dr William L Rodman Dr John B Carnett was elected chairman of the executive committee

The University and Jefferson Merger Held Up—As pointed out in a recent issue of The Journal the merger of the University of Pennsylvania and the Jefferson Medical College was postponed for a year It is now thought that the union which was proposed between the Jefferson Medical College and the Medical Department of the University of Pennsylvania may be indefinitely postponed and that the two schools will in all probability remain on their former independent basis

CANADA

School of Instruction Opened—A school of instruction for the Canadian Army Medical Corps was opened at Camp Borden September 5 under the direction of Capt Victor H McWilliams of the Camp Hospital, and a number of officers are taking the courses There are also nearly 100 accepted applicants at the University of Toronto where Captain McLean is in charge

Hospital News—The following Toronto practitioners have been appointed to the staff of the new Military Hospital (old Toronto General Hospital), Toronto Dr William B Thistle, chief of the medical service, Dr Charles B Shuttleworth, chief of the surgical service and Dr Goldwin W Howland chief of the neurologic service Drs Gordon Bates, Colin Campbell, Archie C Campbell Charles E Treble, Albert G Fleming (Toronto Board of Health) have also been added to the staff with the rank of captain

Personal—Dr F Evelyn Windsor, physician for the Calgary (Alta) School Board, has been made a member of the Army Medical Corps, and will go to the front on active service——Col Herbert A Bruce Toronto, recently cabled his resignation of the presidency of the Academy of Medicine Dr John Ferguson was elected by the council to the presidency and Dr D J Gibbs, Wishart, vice president——Dr Ferguson gave a dinner for Professor Carlson, Chicago, and members of the academy at the York Club the evening of October 3 Afterward Professor Carlson gave an illustrated lecture on studies on the motility of the stomach and on the gastric juice——Profs Irving H Cameron and John J Mackenzie will address the Aesculapian Society, Toronto, the evening of October 19, on their experiences at Orpington and Saloniki, respectively——The following well known Canadian medical men have recently been promoted from lieutenant-colonels to colonels Herbert S Birkett Montreal, James A Roberts, Toronto, Arthur E Ross, C M G, Kingston, Charles A Hodgetts, Ottawa, Murray MacLaren, C M G St John, N B and George Acheson Hamilton, Ont——Maj Perry G Goldsmith Toronto, has been transferred from the Canadian Eye and Ear Hospital at Folkstone, England, to the Military Hospital, Bramshott——Dr Edward Ryan Kingston, Ont, who has been with the Ontario Military Hospital, Orpington England, is home on leave of absence but will return about November 1——Maj John L Todd, Montreal, who has been at the front, has been returned to Canada to assist the Dominion Hospitals Commission He has been appointed one of the three members of the Canadian Pension Board

GENERAL

Bequests and Donations—The following bequests and donations have recently been announced

Hahnemann Hospital New York $40 000 by the will of Mrs. Juliet C Percival

OUR TROOPS ON THE BORDER

Field Hospital Ordered Home—Field Hospital No 1 Ill N G has been ordered home to be mustered out of the United States service

Red Cross Unit for the Front—The Sioux City unit of the American Red Cross, with ten nurses under the direction of Miss Nellie Porter, left, September 11, for service on the Mexican border at Llano Grande, Mexico

Health Record on the Border—Capt Donald Macrae, who went to the border in June with the Iowa Field Hospital Company and was placed in charge of all operative work at the Base Hospital, Brownsville, reports that there has been only one case of typhoid fever and that only one death has occurred this being from sarcoma of the cecum There is an average of 400 patients in the hospital, and when it is considered that there are more than 50,000 men both from the regular establishment and the organized militia in this district, the low record for morbidity is remarkable

PARIS LETTER

Paris, Sept 14, 1916

The War

TRENCH FEVER

Dr Beauchant communicated to the Reunion medicale de la IV-e armee the history of five patients presenting an unusual clinical type, and one which does not fit any known disease After a prodromal period of vague malaise lasting for some days the illness commences suddenly by chills, intense headache, pains in the loins and lower extremities and fever rising rapidly to 40 C (104 F) In the first stage, there is a certain amount of prostration, while the headache, lumbar and limb pains persist These last are the object of special complaint by the patient Their seat is not in the muscles but in the bones, the tibia being tender in its whole length These pains are especially severe at night, interfering with sleep, the tongue is moderately furred there is no diarrhea and no constipation, no exanthem, the spleen is moderately enlarged, there are no chest symptoms, and the liver is normal At this stage, the fever has a peculiar character It is polycyclic, rising to about 104 on the first and second day and then falling to normal or very nearly normal, afterward, it rises again to a second maximum, again falling to normal Sometimes a third rise occurs before an apyrexia lasting some days This last occurred in the three first cases on the eleventh day, in the fourth on the fifteenth day, and in the fifth case on the twentieth day One would now be led to believe the disease cured The patient feels well, and there is but little stiffness in the limbs, the apyrexia does not last In four or five days a fresh febrile attack occurs, with a sudden rise of temperature to 104 or higher rigors more headache, lumbar and limb pains The duration is short, the temperature falls gradually after two or three days, accompanied by moderate sweating, everything appears to be well when again the same cycle repeats itself One patient had seven such attacks The total duration of the illness was considerable, varying between four and ten weeks Beauchant believes this disease is identical with that which occurred during last winter and summer in Flanders and Artois (The Journal, Jan 22, 1916, p 290), and which has been described under the name of trench fever It appears to be due to a parasite which has not yet been isolated and which probably lives in the interior of the globules The disease has been reproduced by the injection of blood or of red blood corpuscles from a patient into a healthy person The intermediate host is probably the louse

TRAINING THE LEFT HAND OF CRIPPLES

Training the left hand to produce ambidexterity has been the subject of several successful experiments in the schools of the United States, England and the Scandinavian countries These results are encouraging from the point of view of vocational education of those victims of the war who have lost their right arm, although it is evident that a late apprenticeship cannot be expected to give the same results as training in childhood Moreover in the case of these cripples, there is no question of ambidexterity but of giving to the remaining arm the strength and skill necessary for the acquisition of a trade In an article published in the *Revue Scientifique,* Mlle Josefa Joteyko a lecturer at the College de France who has made a special study of neuromuscular physiology has attempted to formulate scientific rules for this reeducation of the left hand The general principle to follow in such cases is to make every attempt to enable the cripple to resume his former occupation In other words, an endeavor is made to teach the left hand to carry out the movements formerly performed by the right, as experience has shown that practice acquired by one hand helps the other If one asks a person to write with the left hand he will succeed after several attempts in producing fairly well-formed letters Moreover, the writing of the left hand presents the same peculiarities as that of the right It bears the personal imprint by which the authorship of handwriting is recognized According to Dr Meige the graphic education of the right upper extremity is reflected in the left limb as a mirror image The expression "mirror writing" is commonly employed to designate writing which resembles the image of ordinary writing seen in a mirror In consequence of the bilateral symmetry of the body, mirror writing may be considered as the normal physiologic writing of the left hand By analogy the term "mirror movements" has been applied to movements executed by the left hand in a sense inverse to those executed by the right These are the most natural and the easiest to carry out Mlle Joteyko believes that the explanation of a certain number of failures in the education of the left hand is that this hand has been required to perform movements superposable on those of the right hand and therefore, in general, contrary to its special aptitudes She, therefore deduced the following rule In training the left hand for a trade, movements should follow the laws of bilateral symmetry that is to say, the left hand should not be made to copy the right hand but to carry out the movements of the latter in an inverse direction This rule should prevail, not only in educating the left hand to do work previously executed by the right, but also in learning a new trade Can this education of the left hand be applied to all trades? Mlle Joteyko concludes from her unpublished experiments that intensive work of the left hand produces more considerable effect on the heart than that of the right Therefore, it must be concluded that the use of the left hand cannot be extended to all trades because of *injurious* effects on the heart Physicians, therefore, should examine the hearts of cripples and recommend a change of trade when left-handed work causes too great a strain on that organ

FOR THE PROFESSIONAL REEDUCATION OF WAR CRIPPLES

The chamber of commerce of Troyes has taken up the subject of war cripples in connection with the local industry hosiery There is a shortage of labor in this line, and the chamber has decided to open a competition for the making of artificial arms and hands especially adapted to the hosiery industry A commission composed of employers and hosiery workers as well as orthopedic specialists has just been constituted These instructions are to establish the conditions for such a manufacture by defining the movements necessary for the control of hosiery looms so that the action of hands may serve the purpose for which they are designated It is intended to offer a valuable prize in this competition For this purpose a subscription list has been opened by the chamber which has subscribed 1,000 francs ($193)

Vocational reeducation is being actively pushed at the physiotherapy establishment at Troyes, and the work will be carried on continuously through the creation of a regional school of reapprenticeship to which the syndical chamber of hosiery and the chamber of commerce have promised their support The hosiery works of Troyes have accommodation for 1 000 cripples

CANADIAN MILITARY SURGEONS IN PARIS

The Canadian military surgeons in France who serve in the medical formations created by their compatriots have founded an association of which the Parisian section (Canadian Hospital of the Entrenched Camp of Paris) held its solemn inauguration in the grand amphitheater of the Faculte de medecine Professor Landouzy, dean of the faculte, presided over this ceremony Dr Albee of New York honorary member of the Association des medecins militaires du Canada, and at present surgeon of the hospital of Ris-Orangis, was a guest of this meeting Captain Pariseau, radiologist of the Canadian Hospital of Saint-Cloud, explained before this meeting Dr Albee's method of bone grafts

THE GOLDEN BOOK OF MEDICINE

The Societe de pathologie comparee has placed on sale for the benefit of works of charity (Comite de secours anglo-franco-belge et Caisse d'assistance medicale de guerre) the second illustrated instalment of the Livre d'or de la grande famille medicale (The Golden Book of the Great Medical Family) containing the names of those dead on the field of honor mentioned in dispatches, named for the Legion of Honor, or who have obtained military medals

Roosevelt Hospital New York $5 000 Presbyterian Hospital $7 500 St. John's Guild $3 000 Manhattan Eye and Ear Hospital, $5 000 and Babies Hospital $5 000, by the will of Harris Brisbane Dick

Hospital for Deformities and Joint Diseases New York through Dr Henry W Frauenthal a donation from Mr Herbert Kaufman Pittsburgh

Flushing Hospital New York, a sum sufficient for the endowment of a free bed by the will of S Vernon Mann

St Elizabeth's Hospital and St Joseph's Hospital Chicago each $5 000 by the will of Mary T McLaughlin

Tuberculosis relief work of the Vanderbilt Clinic, $10 000 Department of Tuberculosis of the Presbyterian Hospital New York $10 000 Home Hospital for Consumptives conducted by the Association for Improving the Condition of the Poor $10 000, research work in tuberculosis at the Babbott Memorial Laboratory of the Loomis Sanatorium Saranac Lake N Y $2 000, Trudeau Foundation Saranac Lake N Y $2 000, Roentgen Laboratory of St Joseph's Hospital for Consumptives New York $1 000 appropriated by the East River Homes Foundation of New York

Home for Incurables New York $15 000 by the will of Mrs Emily Thorburn

Caroline Rest, a home for convalescing mothers and babies at Hartsdale N Y the bulk of his $2 000 000 estate by the will of George H Schrader

Railway Surgeons to Meet.—The tenth annual meeting of the Minneapolis, St Paul and Sault Ste Marie Railway Surgical Association will be held at the Hotel Radisson Minneapolis, December 12 and 13——The nineteenth annual meeting of the Sante Fe Medical and Surgical Society will be held at Topeka, Kan October 13 and 14——The twenty-sixth annual meeting of the New York and New England Association of Railway Surgeons will be held at the Hotel McAlpin, New York, October 18 Dr William Seaman Bainbridge, New York, will deliver the address in surgery on "The Cancer Problem"——The fourteenth annual meeting of the Surgical Association of the Rock Island lines was held in St Paul, September 27 and 28, under the presidency of Dr Samuel C Plummer The first day of the meeting was devoted to the reading of papers, and a banquet followed in the evening On the second day clinics were held in Minneapolis and St Paul and the Institute of Public Health and Pathology was visited

New Head for Tuberculosis Society—At the meeting of the Mississippi Valley Conference on Tuberculosis, held in Louisville, October 4 to 6, Mr James Minick, Chicago, was elected president Robert G Patterson Columbus Ohio, vice president, and Dr Robinson Bosworth, St Paul, secretary-treasurer

Army Medical Corps Examination—The surgeon-general of the army announces that preliminary examination for appointment of first lieutenants in the Army Medical Corps will be held in January, 1917 Full information concerning this examination can be procured on application to the Surgeon-General, U S Army, Washington, D C There are at present 228 vacancies in the Medical Corps of the army

Fever Commission Returns—The Yellow Fever Commission of the Rockefeller Foundation, headed by Maj-Gen William C Gorgas, Surgeon-General, U S Army, returned from its tour of investigation in South America arriving in New York September 25 The commission has thus far visited Equador Peru, Colombia and Venezuela No yellow fever was found excepting at Guayaquil, Equador, where thirty deaths occurred during June and July October 7, the commission sailed again to study the situation in Eastern South America and the Amazon Valley, and eventually it will go to Mexico and Yucatan

National Research Council—In the National Research Council which was appointed by the National Academy of Sciences at the request of President Wilson, the medical profession is represented by Dr William H Welch, president of the National Academy of Sciences, Maj-Gen William C Gorgas, Surgeon-General, U S Army, Dr Simon Flexner, director of the Rockefeller Medical Institute, and Dr Victor C Vaughan, Ann Arbor, Mich, formerly president of the American Medical Association The object of the council is to coordinate the scientific research work of the country in order to secure efficiency in the solution of the problems of war and peace

FOREIGN

Edinburgh University Admits Women—It is reported that at a meeting held August 28, the Edinburgh University Court decided to admit women students to its medical classes This decision is especially interesting since when the question came up eight years ago the court voted emphatically against it The changed viewpoint is doubtless the result of the European war, which has seriously reduced the numbers of male medical students

Metchnikoff's Ashes in Pasteur Institute—According to his expressed wishes, the body of Metchnikoff was cremated The ashes are to be kept in a marble urn beside the ashes of Pasteur in the Pasteur Institute at Paris, the scene of their labors

Tuberculosis Dispensaries in France—The German Consul of the Department of the Loire, following instructions from the general government whereby several dispensaries for hygienic measures and protection against tuberculosis must be maintained has opened the first dispensary at St Etienne under the direction of a specialist and a certificated nurse The service is entirely free and the purpose of the regulation and establishment is to produce general and methodical action in the improvement of conditions and reduction in the numbers of tuberculosis cases in housing and working quarters, to aid families of afflicted persons and to afford thorough protection to the community against avoidable infection

Deaths in the Profession Abroad—The cable reports the death of A Magnan one of the leading alienists of France and authority on matters connected with the internment of the insane——C Tiraboschi assistant in the laboratory at Rome of the national public health service, aged 40 He had published a number of reports of research on transmission of disease by insects and water——Our Holland exchange reports the death of A Weil of Wiesbaden aged 68 It was in 1886 that he called attention to the acute syndrome with jaundice, nephritis and enlargement of the spleen now called by his name He was professor of pathology and internal medicine at the University of Dorpat for a time but returned to private practice at Wiesbaden in 1893 His works embrace many fields of medicine——The cable also brings word of the death of V von Czerny, professor of surgery at the University of Heidelberg since 1877 and chief of the cancer research hospital there, aged 74 He has written many articles on all phases of surgery and the treatment of cancer, and has long been preaching the necessity for state aid for research on the causation of diseases and especially of cancer In a special plea at an international scientific gathering in 1912 he deplored the negligence of the various governments in this line of activity

WAR NOTES

Prison Camp Conditions—As the result of a tour of inspection of East Siberian prison camps undertaken by members of a Red Cross organization it is reported that at Atchinsk there was no hospital nor even a room for the sick, that at Krasnoyarsk there was a hospital in camp and one in town fitted out by donations, but there was a shortage of foods instruments and medicine, at the hospital in Godorok 1 116 prisoners had died between October, 1914, and July, 1915 at Kansk the 250 patients had been kept on the floors of four rooms in a brewery and the rations were insufficient and there was a shortage of medicine, at Nijni Udinsk there was only a miserable room for sick prisoners and there were many cases of scurvy due to undernourishment, at Beresowoska there was a hospital on the pavillion system for 600 patients, but this did not satisfy the needs of the camp and nursing and proper food were lacking and in the camp itself there were well provided rooms for the sick and at Chita there was a military hospital occupying the large barracks of the city with good sanitary arrangements, but insufficient food

Medicine in War Group System—In a recent article by Sir Alfred Keogh director-general of the Army Medical Service, he pays tribute to the preparedness of the medical service of the British army and to the aid given by laboratory workers and the National Research Committee In addition to the regular corps and nursing service there was a territorial corps and a territorial nursing service with reserves In addition to the home hospital reserves it is suggested that it would have made for increased efficiency had there been an inclusive Imperial Army Service instead of a separate service for each unit of the empire

Want Surgeon at Nice—Mr H W Bartol, president of the American Hospital at Nice, France, appeals for an American surgeon to take charge of a Red Cross hospital in that city It is asked that some surgeon be sent out who would be willing to serve six months without compensation board and lodging being furnished by the hospital The institution has accommodations for fifty beds and at present forty-nine of these are filled with wounded from the Saloniki front

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Dr. Beauchant communicated to the Reunion medicale de la IV-e armee the history of five patients presenting an unusual clinical type, and one which does not fit any known disease. After a prodromal period of vague malaise lasting for some days, the illness commences suddenly by chills, intense headache, pains in the loins and lower extremities and fever rising rapidly to 40 C. (104 F.). In the first stage, there is a certain amount of prostration, while the headache, lumbar and limb pains persist. These last are the object of special complaint by the patient. Their seat is not in the muscles but in the bones, the tibia being tender in its whole length. These pains are especially severe at night, interfering with sleep; the tongue is moderately furred; there is no diarrhea and no constipation, no exanthem, the spleen is moderately enlarged, there are no chest symptoms and the liver is normal. At this stage, the fever has a peculiar character. It is polycyclic, rising to about 104 on the first and second day and then falling to normal or very nearly normal; afterward, it rises again to a second maximum, again falling to normal. Sometimes a third rise occurs before an apyrexia lasting some days. This last occurred in the three first cases on the eleventh day, in the fourth on the fifteenth day, and in the fifth case on the twentieth day. One would now be led to believe the disease cured. The patient feels well and there is but little stiffness in the limbs; the apyrexia does not last. In four or five days a fresh febrile attack occurs with a sudden rise of temperature to 104 or higher, rigors, more headache, lumbar and limb pains. The duration is short, the temperature falls gradually after two or three days, accompanied by moderate sweating; everything appears to be well when again the same cycle repeats itself. One patient had seven such attacks. The total duration of the illness was considerable, varying between four and ten weeks. Beauchant believes this disease is identical with that which occurred during last winter and summer in Flanders and Artois (The Journal, Jan. 22, 1916, p. 290) and which has been described under the name of trench fever. It appears to be due to a parasite which has not yet been isolated and which probably lives in the interior of the globules. The disease has been reproduced by the injection of blood or of red blood corpuscles from a patient into a healthy person. The intermediate host is probably the louse.

TRAINING THE LEFT HAND OF CRIPPLES

Training the left hand to produce ambidexterity has been the subject of several successful experiments in the schools of the United States, England and the Scandinavian countries. These results are encouraging from the point of view of vocational education of those victims of the war who have lost their right arm, although it is evident that a late apprenticeship cannot be expected to give the same results as training in childhood. Moreover, in the case of these cripples, there is no question of ambidexterity but of giving to the remaining arm the strength and skill necessary for the acquisition of a trade. In an article published in the *Revue Scientifique,* Mlle. Josefa Joteyko, a lecturer at the College de France, who has made a special study of neuromuscular physiology, has attempted to formulate scientific rules for this reeducation of the left hand. The general principle to follow in such cases is to make every attempt to enable the cripple to resume his former occupation. In other words, an endeavor is made to teach the left hand to carry out the movements formerly performed by the right, as experience has shown that practice acquired by one hand helps the other. If one asks a person to write with the left hand he will succeed after several attempts in producing fairly well-formed letters. Moreover, the writing of the left hand presents the same peculiarities as that of the right. It bears the personal imprint by which the authorship of handwriting is recognized. According to Dr. Meige the graphic education of the right upper extremity is reflected in the left limb as a mirror image. The expression "mirror writing" is commonly employed to designate writing which resembles the image of ordinary writing seen in a mirror. In consequence of the bilateral symmetry of the body, mirror writing may be considered as the normal physiologic writing of the left hand. By analogy the term "mirror movements" has been applied to movements executed by the left hand in a sense inverse to those executed by the right. These are the most natural and the easiest to carry out. Mlle. Joteyko believes that the explanation of a certain number of failures in the education of the left hand is that this hand has been required to perform movements superposable on those of the right hand and therefore in general, contrary to its special aptitudes. She, therefore, deduced the following rule: In training the left hand for a trade, movements should follow the laws of bilateral symmetry; that is to say, the left hand should not be made to copy the right hand but to carry out the movements of the latter in an inverse direction. This rule should prevail, not only in educating the left hand to do work previously executed by the right, but also in learning a new trade. Can this education of the left hand be applied to all trades? Mlle. Joteyko concludes from her unpublished experiments that intensive work of the left hand produces more considerable effect on the heart than that of the right. Therefore, it must be concluded that the use of the left hand cannot be extended to all trades because of injurious effects on the heart. Physicians, therefore, should examine the hearts of cripples and recommend a change of trade when left-handed work causes too great a strain on that organ.

FOR THE PROFESSIONAL REEDUCATION OF WAR CRIPPLES

The chamber of commerce of Troyes has taken up the subject of war cripples in connection with the local industry, hosiery. There is a shortage of labor in this line, and the chamber has decided to open a competition for the making of artificial arms and hands especially adapted to the hosiery industry. A commission composed of employers and hosiery workers as well as orthopedic specialists has just been constituted. These instructions are to establish the co[illegible] [illegible] for such a manufacture by defining the mover[illegible] the necessary for the [illegible]ntrol of hosiery looms so that the art[illegible]on of hands may serve the purpose [illegible] designat[illegible]. It is intended to offer a valuable prize in this competition. For this purpose a subscription list has been opened by the chamber, which has subscribed 1,000 francs ($193).

Vocational reeducation is being actively pushed at the physiotherapy establishment at Troyes, and the work will be carried on continuously through the creation of a regional school of reapprenticeship to which the syndical chamber of hosiery and the chamber of commerce have promised their support. The hosiery works of Troyes have accommodation for 1,000 cripples.

CANADIAN MILITARY SURGEONS IN PARIS

The Canadian military surgeons in France who serve in the medical formations created by their compatriots have founded an association of which the Parisian section (Canadian Hospital of the Entrenched Camp of Paris) held its solemn inauguration in the grand amphitheater of the Faculte de medecine. Professor Landouzy, dean of the faculte, presided over this ceremony. Dr. Albee of New York, honorary member of the Association des medecins militaires du Canada, and at present surgeon of the hospital of Ris Orangis, was a guest of this meeting. Captain Pariseau, radiologist of the Canadian Hospital of Saint-Cloud, explained before this meeting Dr. Albee's method of bone grafts.

THE GOLDEN BOOK OF MEDICINE

The Societe de pathologie comparee has placed on sale for the benefit of works of charity (Comite de secours anglo-franco-belge et Caisse d'assistance medicale de guerre) the second illustrated instalment of the Livre d'or de la grande famille medicale (The Golden Book of the Great Medical Family) containing the names of those dead on the field of honor, mentioned in dispatches, named for the Legion of Honor, or who have obtained military medals.

CONVALESCENT OFFICERS ON THE BORDERS OF LAKE GARDA

The mayors of the towns situated on the borders of Lake Garda in Italy have held a meeting to examine a proposition formed by the allied governments that convalescent officers should be sent to this region This initiative has been supported by the chambers of commerce of Paris, London and Petrograd, and has obtained the help of the General Direction of the Railways After a short discussion, the mayors unanimously voted their acceptance of the proposition

THE AMERICAN HOSPITAL ON THE SERBIAN FRONT

Under the auspices of the commission for coordination of auxiliary service of the armies of the East, a surgical hospital has been installed quite close to the Balkan front, especially devoted to the wounded of the Serbian armies This hospital, provided with all recent improvements, is almost entirely due to generous contributions of Americans (The American Relief Clearing House), who have given 200 complete beds, the operating theater, roentgenographic and roentgenoscopic installations, electrovibrator, Carrel-Dakin apparatus, etc Therefore, the commission of coordination of the direction of the Serbian sanitary service of health have given to this model formation the name of the "American Hospital of the Second Serbian Army"

The League for the Increase of the French Birth Rate

A league has just been constituted under the presidency of Mr Paul Bureau, professor at the Faculte libre de droit de Paris and at the Ecole des hautes etudes sociales, to unite all citizens who are conscious of the peril which their country runs in consequence of birth control, and who desire to assure the progressive increase of its population This group intends to devote itself to a campaign of moral education intended to bring home to each citizen the duties imposed [illegible] him by the necessity for the perpetuation of the race The tragic circumstances of the present time render this duty imperative The headquarters of the league are at 85 Richelieu Street, Paris

Marriages

Samuel Pritchard Fetter, M D, Portsmouth, Ohio, to Mrs Gertie Meek Mayo of Paintsville, Ky, at Ashland, Ky, September 23

Frank Curtiss Davis M D, Lewistown, Mont, to Miss Frieda Ullig of Vienna, Austria, at Lewistown, September 25

Sumner Cheever Andrews, M D, Gloucester, Mass to Miss Hilda Simmons of Waldo, Ark, about September 28

Henry Charles Schmitz, M D, Marshalltown Iowa, to Miss Margaret Alice Rourke of Sterling, Ill, October 10

P A Surg Robert Olesen, U S P H S, Pittsburgh, to Miss Florence Watson of River Forest, Ill, October 6

William G Wood Jr, M D, St Louis, to Miss Ida Heidbrink of Maplewood, Mo, at St Louis, September 23

Edward Carl Gaebe, M D, Halliday, N D, to Miss Iva Dell Larson of New Salem, N D, September 28

Kimball Bannister, M D, Phoenix, Ariz, to Miss Elizabeth Clayton Davis of Milwaukee, September 23

Charles Bradley Pinkham, M D, to Miss May Agnes Austin, both of San Francisco, September 27

Henry Blakeslee Boyden, M D, Grand Island, Neb, to Miss Eva Brix of Omaha, September 20

Eugene Lindsay Opie, M D, St Louis, to Miss Margaret Simpson of Toronto, Ont., September 16

Jay Claude Simmons, M D, Norris, Ill, to Miss Rachel Cattron of Fairview, Ill, September 27

William Ford, M D, Morea Pa, to Miss Rose Straub of Ashland, Pa, at Buffalo, September 18

Charles C Jones, M D, Comfort, Texas, to Miss Dove McElroy of Oklahoma City, October 1

Anthony Mathias Drummy, M D., Lincoln, Ill to Miss Nora Ryan of Paxton, Ill, October 4

W Frank Gemmill M D, Woodbine, Pa, to Miss L Evis Waters of Norfolk Va September 25

Jason W Albaugh, M D, to Miss Ruth Long both of Mingo Junction Ohio September 18

Joseph J Sarazin M.D to Miss Ethelwyn Trevor Bowdell both of Nyssa, Ore, September 20

Deaths

Harry Huston Whitcomb, M D, Norristown, Pa, University of Pennsylvania, Philadelphia, 1880, aged 60, a Fellow of the American Medical Association, formerly vice president of the Medical Society of the State of Pennsylvania and of the Norristown Board of Health, consulting physician to the State Hospital for the Insane, surgeon of Charity Hospital and St Joseph's Protectory, secretary of the Montgomery County Medical Society and a member of the state board of health, died in Atlantic City, N J, September 28, from angina pectoris

Arthur William Tanner, M D, Moosomin, Sask, University of Toronto, Ont, 1899, aged 44, for six years a member of the town council and for two years mayor of Moosomin lieutenant-colonel in the Canadian Army Medical Corps, in command of No 10 Field Company, Canadian expeditionary forces in France, while advancing to a dressing station, June 3, was struck by a shell and killed

William H Barry, M D, Hot Springs, Ark, Memphis (Tenn) Medical College, 1858, aged 80, a pioneer practitioner of Hot Springs, formerly president of the Arkansas State Medical Society, founder and chief surgeon of the Barry Hospital, a Confederate veteran, for many years a member of the city council and organizer of the first board of health, died at his home, September 26

John Lester Keep, M D, Brooklyn, Hahnemann Medical College, Philadelphia, 1860, New York Homeopathic Medical College, New York, 1866, aged 79, medical director of the Gates Avenue Dispensary, surgeon of the Thirteenth Infantry N G, N Y, in 1868 and in 1883 made colonel, attached to the Second Division, died from heart disease at his summer home at Shelter Island, N Y, September 30

Josiah Coloman Haney, M D, Dalton, Ohio, Ohio Medical University, Columbus, 1895, aged 50, a Fellow of the American Medical Association and a well known practitioner of Wayne County, Ohio, while driving over a grade crossing of the Wheeling and Lake Erie Railroad near East Greenville in his automobile, September 23, was struck by a locomotive and instantly killed

Albert Currier Buswell, M D, Epping N H, Medical School of Maine, Brunswick, 1878, aged 63, a member of the New Hampshire Medical Society, formerly chairman of the Epping Board of Health, once president of the Rockingham County Medical Society, died at his home, August 12 from diabetes associated with tuberculosis of the lungs

Ernest E Hamilton, M D, Wichita, Kan, University of Michigan, Ann Arbor 1879, aged 60, a Fellow of the American Medical Association, a specialist on diseases of the eye ear nose and throat, local oculist for the Missouri Pacific and Frisco systems, died suddenly from heart disease, while taking lunch at the Wayside Inn, Drury, September 29

John Archibald McLeod, M D, Milwaukee Wis, University of Michigan, Ann Arbor 1878, aged 61, for several years a practitioner of Ironwood, Mich, surgeon and acting brigade surgeon, Michigan National Guard, one of the organizers of the First National Bank of Ironwood, died suddenly at his home, September 21

John Vernon Solandt, M D, Hayden, Colo, Gross Medical College, Denver, 1898, aged 46, a member of the Colorado State Medical Society and in 1913 president of the Routt County Medical Society, was instantly killed by the overturning of his automobile, September 26 while on his way to make a professional call at Steamboat Springs

George Brinton Wilson, M D, Captain and Medical Director U S Navy, Dartmouth Medical School, Hanover N H 1889, aged 53, commandant of the U S Naval Hospital Chelsea Boston, died in that institution October 1, after eleven years and eleven months sea service and thirteen years two months' shore or other duty

James Y Shearer, M D, Reading Pa, Jefferson Medical College, 1862, aged 79, a Fellow of the American Medical Association and for fifty-two years a practitioner of Sinking Springs, Pa, once president of the Berks County Medical Society, died at his home, September 23 from arteriosclerosis

Bishop Asbury Rose, M D, Linton, Ind, Medical College of Ohio Cincinnati 1875, aged 66, formerly a Fellow of the American Medical Association, a member of the Indiana State Medical Association, died at his home, September 25, from diabetes

William D Moore, M D, Philadelphia, University of Pennsylvania Philadelphia, 1893, aged 49, formerly a Fellow of the American Medical Association, also a graduate in pharmacy, died at his home in Germantown, Philadelphia, September 27, from heart disease

Cecil L Hudgins, M D, Olive Hill, Ky , St Louis College of Physicians and Surgeons, 1889, aged 59, a Fellow of the American Medical Association, local surgeon of the Chesapeake and Ohio System for many years, died at his home, September 28, from arteriosclerosis

Robert M Hill, Farmington, Pa (license, years of practice, Fayette County, Pa , 1881), aged 74, for two terms a member of the assembly from Fayette County, a veteran of the Civil War, died suddenly from cerebral hemorrhage, while visiting in Dawson, Pa , September 21

James H Callahan, M D, Carthage, Ill , Bellevue Hospital Medical College, 1870, aged 72, formerly a member of the Illinois State Medical Society, and president in 1913 of the Hancock County Medical Society, died at the home of his daughter in Cedar Rapids, Iowa, September 22

George W Boerstler, M D, Lancaster, Ohio, University of Wooster Cleveland 1867, aged 70, a Fellow of the American Medical Association and one of the oldest and most prominent practitioners of Fairfield County, died at his home September 19 from cerebral hemorrhage

William H Begg, M D, Columbus Grove, Ohio, Medical College of Ohio, Cincinnati, 1881, aged 63, formerly a Fellow of the American Medical Association, a member of the Ohio State Medical Association, died at his home, July 26, from mitral insufficiency

Charles Roy Armstrong, M D, Thorntown, Ind , Homeopathic Medical College of Missouri, St Louis 1896, aged 42, died in St Elizabeth s Hospital, Lafayette Ind, September 21, three days after an operation for appendicitis

Frank Webster, M D, Dayton, Ohio, Pulte Medical College Cincinnati 1882, aged 62, for many years a member of the staff of the Miami Valley Hospital, died at his home, September 21, from heart disease

Harry Carpenter Weber, M D, Louisville, Ky , Kentucky School of Medicine, Louisville 1898, aged 46, a member of the Kentucky State Medical Association, a specialist in urology, died at his home, October 6 from uremia

Baldwin Berne Scott, M D, Mt Vernon, Ohio, University of Wooster, Cleveland, 1876, aged 67, at one time secretary of the Knox County Medical Society, died at his home, September 19, from heart disease

Adam Miller, M D, Jordanville, N Y , Geneva (N Y) Medical College, 1844, aged 97, surgeon of volunteers during the Civil War and at one time superintendent of schools for the town of Warren, died at his home, September 28

Luther J Ingersoll, M D, Denver, Homeopathic Medical College of Missouri St Louis, 1875, aged 78, a practitioner of Denver, died at his home, September 19, from cerebral hemorrhage

Paul W Fayn, M D, St Louis, St Louis College of Physicians and Surgeons 1900, an advertising specialist, died at Shelbyville, Mo, September 13, it is said from an overdose of cocain

James Evans, M D, Burlington Junction, Mo , College of Physicians and Surgeons, Keokuk, Iowa 1879, aged 83 who was operated on in St Joseph September 4, died in the Noyes Hospital in that city September 14

Albert W Cochran, M D, Hammonton N J, and Charlottesville, Pa , Medico-Chirurgical College of Philadelphia, 1896 aged 63, died suddenly at the home of his daughter in Fitchburg, Mass, September 15, from heart disease

John Bell Whitehead, M D, Lovingston, Va , Gate City Medical College, Texarkana, Texas, 1902, aged 72 died at his home September 5

Elmer Morton Druley, M D, Centerville, Ind , Eclectic Medical Institute, Cincinnati, 1891, aged 52, died at his home, July 18, from paresis

Samuel J Tilden Carswell, M D, Jacksonville Fla , Medical College of Georgia, Augusta, 1900, aged 40, died at his home, September 14

Aaron J King, M D, Atlanta Ga , Southern Medical College Atlanta, 1895, aged 68, died in a hospital in Atlanta, September 8

Reuben Marshall, M D, Cowan Ind Miami Medical College, Cincinnati, 1876, aged 76, died at his home July 10

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed Every letter must contain the writer s name and address, but these will be omitted on request

NAPHTHALENE IN GASOLINE FOR AUTOMOBILES

To the Editor —Your note Naphthalene in Gasoline for Automobiles,' THE JOURNAL, September 16 p 897, is to the point There is another aspect to the question however which may be of interest to your readers who own cars, and some of whom might feel inclined to experiment with naphthalene, or as you suggest moth balls

The present day automobile engines are constructed for the use of liquid fuels of comparatively low boiling points In the fractional distillation as usually carried out for the testing of gasoline the final boiling point of most brands is near or under 175 C The higher this final boiling point, the greater will be the tendency to incomplete combustion and consequent carbon formation in the cylinders

It is plain that the presence of naphthalene (boiling at 218 C) and similar compounds in gasoline will be disadvantageous in this respect There may be quiet smooth easy running for a while but then most of the augmented power' may crop out in the owners temper when he finds his cylinders clogged up in a jiffy' Naphthalene etc —whether as moth balls or otherwise—in an appropriate vehicle are all right for Diesel engines but they are liable to cause indigestion when fed to the average automobile

F W L TYDEMAN, M D Martinez Calif

BRAINS AS A DEPILATORY

To the Editor —Will you explain this phenomenon When the raw or fleshy side of the hide of a deer or squirrel is rubbed vigorously with the fresh brains of the same animal and the same side exposed to a temperature of 150 degrees (dry heat) the hair can very readily be removed by scraping the same thus acting as a depilatory ' This is the method of dressing hides used by the Indians of the West

HUNTER

ANSWER —Our correspondent asks us to "explain this phenomenon," which he quotes Before explaining the "phenomenon,' we should want to be quite sure that it exists It sounds very much like the superstition in regard to planting this, that or the other "garden truck' in the "dark" or the "light" of the moon It is quite possible that the Indians of today, some of them at least, would know when the temperature reached 150 degrees The loosening of the hair previous to tanning by partial putrefaction of the epidermis is a known process sometimes called sweating In this the fleshy side of the hide is salted or treated with crude acetic acid It is possible that the loosening of the hair on the hides under the condition mentioned is simply due to partial putrefaction of the epidermis The brain tissue contains lipoid substance and moisture It would make a fairly good culture medium because of its fatty content It would also be protective and so facilitate the growth of certain anaerobic bacteria which cause putrefaction Using the 'fresh brains from the same animal" would be the natural thing to do, because they would be handy, especially to the Indian

ETIOLOGY OF RHUS POISONING

To the Editor —Relative to the Current Comment on The Poisonous Principle of Poison Oak (THE JOURNAL Aug 5 1916 p 441) and the communication of Dr Leland (Queries and Minor Notes Sept 2 1916 p 763) allow me to state that I have made a careful research of the etiology of rhus poisoning covering the past two years and have collected somewhat more than 100 reports of cases in my own practice and in that of other physicians From the study of these I am driven to take issue with the answer to the query of Dr Leland which in effect denies the occurrence except in very rare instances, of poisoning by this plant *without contact* I have several very detailed histories of cases in which all possible contacts through clothing or delayed and latent poisoning by other adventitious means, were beyond question eliminated Consideration of the possibilities in the etiology together with studies of the bacteria always found on the leaves of the rhus plants has forced me to lay less stress on the role of the active principle toxicodendrol and to assign to these bacteria an active agency in the etiology The subject is one which calls for an open mind and special laboratory investigation I should be very glad to hear from any workers in this field

LOWELL C FROST M D Beverly Hills Calif

Credulity —Man is a dupable animal Quacks in medicine, quacks in religion, and quacks in politics know this and act on that knowledge There is scarcely any one who may not, like a trout be taken by tickling —Robert Southey

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arkansas Regular Little Rock, Nov 14 Sec Dr T J Stout, Brinkley Homeopathic Little Rock Nov 13 Sec Dr Scott C Runnels 900 Scott St Little Rock Eclectic Little Rock Nov 14 Sec Dr C E Laws 712 Garrison Ave Fort Smith

Connecticut Homeopathic, New Haven, Nov 14 Sec Dr E C M Hall 82 Grand Ave New Haven Eclectic New Haven Nov 14 Sec Dr T S Hodge 19 Main St Torrington

Florida Homeopathic Jacksonville Nov 10 Sec Dr J B Griffin St Augustine

Iowa Des Moines Oct 17 19 Sec Dr Guilford H Sumner State House Des Moines

Maine Portland Nov 14 15 Sec Dr Frank W Searle 776 Congress St Portland

Massachusetts Boston Nov 14 16 Sec Dr Walter P Bowers Room 501 No 1 Beacon St Boston

Mississippi Jackson Oct 24 25 Sec Dr J D Gilleylen Jackson

Nevada Carson City, Nov 6 Sec Dr S L Lee Carson City

New Jersey Trenton Oct 17 18 Sec Dr Alexander MacAlister, 438 E State St, Trenton

South Carolina Columbia Nov 14 Sec Dr A Earle Boozer 1806 Hampton St Columbia

Texas Fort Worth Nov 14 16 Sec Dr J S McCelvey Temple State Bank Bldg Temple

West Virginia Parkersburg Nov 14 Sec Dr S L Jepson State Health Commissioner Charleston

Medical Colleges Not Accredited in Missouri

According to the official bulletin of the Missouri State Board of Health, the board at a meeting, held July 17 1916, by unanimous vote declared that after that date the following medical schools would not be accredited

College of Physicians and Surgeons San Francisco
College of Medical Evangelists Loma Linda Calif
Georgia College of Eclectic Medicine and Surgery Atlanta Ga
Chicago Hospital College of Medicine Chicago
Jenner Medical College Chicago
College of Physicians and Surgeons, Boston
Lincoln Medical College Lincoln Neb
New York Medical College and Hospital for Women, New York City
Ohio State University College of Homeopathic Medicine, Columbus O

The board at previous meetings had taken similar action regarding

Southwest School of Medicine and Hospital Kansas City Mo
Eclectic Medical University Kansas City Mo
University of West Tennessee Medical Department Memphis Tenn

A New Medical School in India

A new medical school the Belgachia Medical College, is reported[1] as having been formally opened in July, 1916, at Belgachia a suburb of Calcutta, India It is said to be 'the first medical college in Bengal organized by private enterprise and managed entirely by Bengali medical men" Instruction is in the English language, the course extends over five years, and the curriculum agrees with that for the Bachelor of Medicine degree of the University of Calcutta with which it is in affiliation It is said to have ample buildings and fair hospital and dispensary facilities, and it has government recognition Its enrolment of students is limited, since it is reported that 725 students applied for admission last year but there were only 137 vacancies

It is said that the main purpose of the government medical colleges of which there are five in India is to provide officers for the public services and that they are not adequate to supply the medical practitioners needed by the native population of India Previous efforts were made to establish private medical schools, but owing to lack of funds and suitable accommodations, they failed, since government recognition was not granted to them

This new medical school is evidently the result of years of effort It was organized in 1887 under great difficulties as the Calcutta Medical College It was not permitted to have dissecting done nor could it carry on clinical instruction since it had neither hospital nor dispensary The following year limited access was obtained to a native hospital and in its second year permission for dissection was secured In 1897 a fifteen-bed hospital was provided, and five years later it opened a forty-bed hospital at Belgachia, its present location In 1904 it absorbed the College of Physicians and Surgeons, another private, unrecognized medical school It has since received liberal financial support from the government, the municipality, the University of Calcutta, and from influential and wealthy natives of India The result was the opening in July of the reorganized medical college, which has received recognition by the government

New York May Report

Mr H H Horner, Chief Examinations Division of the New York State Board of Medical Examiners, reports the written examination held at Albany, Buffalo, New York and Syracuse, May 16-19, 1916 The total number of subjects examined in was 8, total number of questions asked, 80, percentage required to pass, 75 The total number of candidates examined was 59, of whom 47 passed and 12 failed Three candidates were licensed through reciprocity and four were granted reregistration licenses The following colleges were represented

College	Year Grad	Total No Licensed
PASSED		
Leland Stanford Junior University	(1914)	1
University of California	(1900)	1
Georgetown University	(1913)	1
George Washington University	(1915)	1
Tulane University of Louisiana	(1914)	1
College of Physicians and Surgeons Baltimore	(1914)	1
Johns Hopkins University	(1914) (1915)	2
Albany Medical College	(1902) (1914 3) (1915)	5
Columbia Univ Coll of Phys and Surgs	(1913) (1915 2)	3
Cornell University	(1915)	2
Fordham University	(1914) (1915)	2
Long Island College Hospital	(1911) (1914) (1915)	3
New York Homeo Med Coll and Flower Hosp	(1914 2) (1915 3)	5
New York Med Coll and Hosp for Women	(1915)	1
Syracuse University	(1915)	2
Univ and Bellevue Hosp Med College	(1914 2) (1915 2)	4
University of Cincinnati	(1911)	1
Jefferson Medical College	(1912) (1913)	2
Medico Chirurgical College of Philadelphia	(1915)	1
University of Pennsylvania	(1902) (1912)	2
University of Vermont	(1914) (1915 2)	3
University of Virginia	(1914)	1
University of Toronto	(1916)	1
University of Naples	(1905)	1
FAILED		
Howard University	(1916)	1
Northwestern University	(1896)	1
Boston University	(1915)	1
Albany Medical College	(1911) (1915)	2
Columbia University Coll of Phys and Surgs	(1914)	1
New York Homeo Med Coll and Flower Hosp	(1914) (1915)	2
University of Buffalo	(1913)	1
University of Nashville	(1906)	1
University of Turin	(1892) (1914)	2

College	Year Grad	Reciprocity with
LICENSED THROUGH RECIPROCITY		
New York Homeo Med Coll and Flower Hosp	(1914)	New Jersey
Medical College of Ohio	(1907)	Ohio
University of Virginia	(1913)	Virginia

Louisiana June Report

Dr E L Leckert secretary of the Louisiana State Board of Medical Examiners, reports the written examination held at New Orleans, June 8-10 1916 The total number of subjects examined in was 11, total number of questions asked 100, percentage required to pass 75 The total number of candidates examined was 60, of whom 52 passed and 8 failed Four candidates were licensed through reciprocity The following colleges were represented

College	Year Grad	Per Cent
PASSED		
Howard University	(1914)	80 9
Bennett Medical College	(1915)	88 7
Tulane University of Louisiana	(1910) 77 4 (1915)	79 3 85 8, (1916) 81 81 8 82 4 82 5 82 7 84 5 85 3 85 5 85 7 85 7 86 3 86 7 86 8 86 8 87 87 87 2 87 5 87 6 87 6 87 7 87 9 88 1 88 2 88 3 88 4 88 4 88 6 88 7 88 8 89 3 89 4 89 4 89 6 89 6 89 7 89 8 89 9 90 5, 90 8 91 91 2, 91 6
Hahnemann Med College and Hospital Philadelphia	(1914)	84 6
Meharry Medical College	(1916)	75 6
Baylor University	(1911) 82 7 (1912)	79 6
FAILED		
University of Alabama	(1907)	70 7
College of Physicians and Surgeons Memphis	(1911)	56 7
Memphis Hosp Med Coll	(1908) 68 6 (1910) 67 5 (1911)	73 1
University of Tennessee	(1913) 66 3 73 9 (1914)	72 8

College	Year Grad	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Atlanta Medical College	(1915)	Georgia
College of Physicians and Surgeons Keokuk	(1888)	Illinois
University of Maryland	(1911)	Maryland
University of Tennessee	(1915)	Arkansas

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[1] The Belgachian Medical College Brit Med Jour Sept 2 1916 page 333

Book Notices

THE DREAM PROBLEM By Dr A E Maeder Authorized translation by Drs Frank Mead Hallock and Smith Ely Jelliffe Paper Price 60 cents Nervous and Mental Disease Monograph Series No 22 New York The Nervous and Mental Disease Publishing Company, 1916

Maeder presents the subject as an expression of personal conviction, but his views are suited to show the existing differences in opinion between the Vienna and Zurich schools of psychanalysis He believes that no real or necessary differences exist between them as the things accomplished by the Zurich school have been the natural outcome of what Freud gave them According to his conception, the axiom that the dream is a wish fulfilment is too indefinite and especially one sided for it actually fails to embrace the important teleological side of the unconscious function" He assumes two functions of the dream, the cathartic action, on the unloading of the emotion, on which the chief stress has been laid up to date, and the preparing function, the overcoming of the conflict, the real freeing by means of sublimation In the interpretation of the latter function, Maeder attaches a greater importance to the manifest dream content than Freud The conception of the dream as a wish fulfilment contains only the regressive side of the phenomenon and is an expression of the 'pleasure principle,' whereas the preparing function indicates the progressive form of the activity of the libido and is the expression of the "reality principle" The principal idea of a former contested article of Maeder is In the dream there is at work a preparatory arranging function which belongs to the work of adjustment' This expresses clearly his point of view on the reality principle In presenting this subject, Maeder gives some good dream analyses and discusses the significance of the manifest dream content the dream in its psychic environment, types of dreams, and the tendencies of the Vienna and Zurich schools in psychanalysis The monograph is written clearly and concisely, and by its lack of ambiguity shows Maeder's grasp of the situation Too many references to further publications and a forthcoming book strike a discordant note

THE AMERICAN ENCYCLOPEDIA AND DICTIONARY OF OPHTHALMOLOGY Edited by Casey A Wood M D, C M D C L, Professor of Ophthalmology and Head of Department College of Medicine University of Illinois Volume 9—Institutions for the Blind to Lemotes Cloth Price, $6 Pp 6419 to 7190 with illustrations Chicago Cleveland Press, 1916

The American Encyclopedia of Ophthalmology shows no lowering, but rather a raising, of its standard in Volume IX Judging by the past rate of progression, this monumental work will run to twelve or fourteen volumes Among the more important articles in the present volume are 'Institutions for the Blind" (concluded) by Charles F F Campbell, by far the best of all the books or articles on this subject in any language, Intracranial Organs of Vision," by Carl Dudley Camp, Iritis" by Charles P Small, "Krönlein's Operation" by the editor and the series of articles on the various forms of keratitis by Joseph D Lewis The article on Lacrimal Apparatus" by Howard F Hansell, is especially clear succinct and practical The longest article is one of 147 pages by Thomas Hall Shastid, entitled 'Legal Relations of Ophthalmology" a subject which as the editor declares in a footnote, was first developed by Dr Shastid This article exhibits the results of untiring industry, as well as a wide and accurate knowledge of both law and medicine Once again, the only fault which could properly be found with the encyclopedia is an occasional overinclusion or minor omission For example, under the definition of Colles' law a statement should have been added to the effect that this law is no longer regarded as correct in its old form, the reason that a mother is not infected by her child being that she has syphilis already

The publisher, the editor and the collaborators who are responsible for the American Encyclopedia of Ophthalmology are to be congratulated

Miscellany

The Scope and Function of the U S Pharmacopeia and National Formulary

In a review of the National Formulary in the August number of the *Journal of the American Pharmaceutical Association*, Mr Wilbur L Scoville of Parke, Davis & Co makes some statements concerning the U S Pharmacopeia and the National Formulary Mr Scoville is not a member of the Revision Committee of the U S Pharmacopeia, and therefore it is presumable that he erred through ignorance of the facts rather than through intention He says in part

"There is one very essential difference between the Pharmacopeia and the National Formulary which will keep them distinct and will avoid conflict The Pharmacopeia is an authority on therapeutics, and its scope is controlled by therapeutic considerations, but the National Formulary does not vouch for any therapeutic efficiency, and recognizes any preparation of pharmaceutical soundness which is used to a marked extent by physicians

"The Pharmacopeia is controlled by the 'regular' school of practice, but the National Formulary makes no distinction between allopaths, homeopaths, osteopaths, chiropractors or any other school of practice Its mission is to perfect or select the pharmaceutical qualities of the formulas, and to allow the physicians as a whole to adjust or judge the therapeutics Hence there is not likely to develop any rivalry or antagonism between the two books"

In the September number of the *Journal of the American Pharmaceutical Association* Dr Oliver T Osborne, a member of the Committee of Revision of the U S Pharmacopeia, replies to some of the statements made by Mr Scoville He says in part

"In the first place the Pharmacopeia is not an authority on therapeutics and it was repeatedly and distinctly so stated and so urged in various discussions held by the Subcommittee on Scope, a component part of the Revision Committee of the Pharmacopeia I was a strong advocate that a drug which was therapeutically useless should not enter the ninth revision of the United States Pharmacopeia, but I was repeatedly and permanently outvoted, those who differed from me voting for the principle that the United States Pharmacopeia was 'not a book on therapeutics' The Subcommittee on Scope, consisting of nine members, passed a 'guiding principle' that a drug to be admitted to the United States Pharmacopeia should be of 'therapeutic usefulness' or of pharmaceutic necessity'

"On the floor of the Pharmacopeial Convention held in 1910, it was stated that it was the duty of physicians to select the drugs, and the duty of pharmacists to decide how the preparations of the drug should be made Neither was this obviously correct division of labor lived up to, nor were the 'guiding principles' of the Subcommittee on Scope lived up to

'Of the fifty members of the Revision Committee only six were physicians engaged in the practice of medicine, and four of these physicians were members of the Subcommittee on Scope Basing their recommendations on the fact that very many drugs and preparations in the Pharmacopeia of 1900 were therapeutically useless, this Subcommittee on Scope recommended the deletion of more than 150 drugs and preparations, and more than half of these drugs and preparations were recommended for the Pharmacopeia by the Executive Committee, only one member of which was a practicing physician This all-powerful Executive Committee also introduced into the Pharmacopeia drugs that had not even been passed upon by the Subcommittee on Scope In other words, the votes, advice and decision of the hard-working Subcommittee on Scope, aiming at therapeutic usefulness of drugs that should enter the new Pharmacopeia, were largely turned down, overruled and overvoted by the Executive Committee (an all-powerful committee that passed on all recommendations of the subcommittees), and only one member of this Executive Committee is a practicing physician, and therefore the only one qualified to pass upon the therapeutic value of a drug or preparation Hence the reasons that more than half of the drugs and preparations recommended for deletion by the Subcommittee on Scope, and introduced into the Pharmacopeia by the Executive Committee, in spite of such deletion recommendation, were not therapeutic reasons Therefore the book is *not* an authority on therapeutics and was not intended to be such In fact, it is a book of valuable therapeutic drugs interspersed with several hundred drugs and preparations that are either useless or inferior to the few that are of value

"A drug, to have therapeutic value, must have some recognized activity on the human body A very large number of those in the new Pharmacopeia have no such activity Even the doses of the drugs are not authoritative, only suggestive The dose of a drug is enough to produce the results required, more or less than the dose suggested by the Pharmacopeia

'That the Pharmacopeia is controlled by so-called "regulars" is another statement that is not a fact Only four members of the Executive Committee, which committee is *entirely responsible* for the contents of the Pharmacopeia, have the degree of M D Hence the book represents the drugs and preparations that the expert drug men in all branches of the drug traffic desire to have in the book

"Also, one cannot well see how those who use no drugs in the treatment of disease could be interested in a book on drugs Therefore, to intimate that such were shut out of the United States Pharmacopeia is a reflection on their supposedly drugless practice, and criticism cannot be made of the Revision Committee, thirty-two of whose fifty members are drug experts

"Exactly how the so-called osteopaths, their pseudo friends, the chiropractors and other schools of practice,' perhaps mental and Christian scientists, i e, drugless treaters of disease, can or will find the fourth revision of the National Formulary useful is a question in psychology And also it should be remembered that the state medical laws prohibit these sects from giving or prescribing drugs"

Homologous Serotherapy in Poliomyelitis

A Netter has called attention to the therapeutic value of the serum from persons who have recovered from poliomyelitis in treatment of fresh cases of the disease He now has a record of 34 patients thus treated, and he reports that 8 were completely cure 3 almost completely, 9 were materially improved and 3 somewhat improved In 3 cases no influence was apparent and 8 died In the 2 latest cases the poliomyelitis developed with symptoms suggesting cerebrospinal meningitis The first signs of paralysis were noticed the third and the fifth days, and the serotherapy was commenced in less than forty-eight hours thereafter It was kept up for six or eight days Benefit was apparent within twenty-four hours, and the paralysis had entirely disappeared by the fourth and the nineteenth days Some of the serum used had been taken three months before from a girl who had had poliomyelitis and had entirely recovered nearly a year before The other serum had been drawn a month before from a young man who had had infantile paralysis in early childhood In one of the later cases the first symptoms of the poliomyelitis were noticed the day after the child had been vaccinated, and the family regarded the vaccination as responsible for the poliomyelitis

The intraspinal technic for this homologous serotherapy is the same as for antimeningitis serum The total amount injected was 35 c c in six injections in one of the last two cases, and 46 c c in eight injections in the other The blood is obtained for the purpose from a vein at the elbow, 200 or 250 gm of blood yields 80 or 100 gm of serum The latter is distributed in vials containing 5 or 8 c c They are repeatedly tyndallized (intermittent sterilization) for several days and then kept on ice The meningitic form of poliomyelitis permits the earliest diagnosis and the limpid cerebrospinal fluid confirms the differentiation (The fluid may contain cells) The absence of the knee jerk suggested the true nature of the trouble in some of the cases even before lumbar puncture In one case the diagnosis was based in part on the knowledge of another case of poliomyelitis in the family, and the serotherapy was instituted in time to ward off all paralysis Netter's latest communication on the subject was published in the *Bull et mem Soc med d hop de Paris,* March 23, 1916 p 299

Medicolegal

Laborer Being Overheated and Overworked

(Louisville & N R Co vs Sawyers (Ky) 184 S W R 1173)

The Court of Appeals of Kentucky reverses a judgment for $3,000 that was rendered in favor of plaintiff Sawyers who alleged that he was permanently and painfully injured by becoming too hot and being overworked on a day in July while he was employed as a shoveler and mover of sand in the company's sand pits The court says that if the case was to be treated as one seeking a recovery because the plaintiff became overheated while engaged in his work, it was clear there could be no recovery under the principles laid down in a comparatively recent cinder pit case, in which it was held that "the master is under no duty to prevent his servant from becoming overheated at his work resulting from atmospheric or weather conditions, as they are matters entirely beyond his control In such case, while the servant may not always certainly know how to keep himself within the limits of safety, he is better able to judge than any one else how much heat he can safely stand, how it affects him, and when his endurance reaches a point beyond which he ought not, for his own safety, to continue to work For these reasons it is for him, and not the master, to determine whether he shall engage in the work at all, or, if so, how energetically, and when he should rest or quit," etc And if under the allegations the present case could be properly treated as one for damages because the plaintiff was overworked or was required to overtax his physical strength, the same result must be reached It is a pathetic thing to see a trusted employee, who has faithfully toiled in the service of his employer until he has reached the limit of his physical endurance, cast adrift, but until there has been a revolution in our whole industrial system such things must be It is an inexorable decree of Nature that wornout things, no matter what may have been their value in the past, shall be cast aside The only safe and practicaly rule is that each man is the best judge of his own physical strength and powers of endurance, that he knows better than any other can when the limit has been reached, and, when, in following his own instinct of self-preservation, he must desist and exercise his right under the law to give up his work if it is more than he can stand In either view of this case, the motion for a directed verdict for the defendant should have been sustained

Disclaimers by Chiropractor of No Avail—Attack on Law Not Sustained

(Teem vs State (Tex) 183 S W R 1144)

The Court of Criminal Appeals of Texas in affirming a conviction of defendant Teem of illegally practicing medicine, says it thinks there can be no sort of doubt but the testimony showed as charged in the indictment, that he unlawfully practiced medicine, as denounced by law, and no honest jury could have done otherwise than find him guilty It may be that colleges, from one of which he had a diploma, teach a new science of how to relieve "human beings" of some of the disorders or ills of this life, and effect cures thereof, but if so, the evidence clearly demonstrated that the practice of it by the defendant whatever it be named or called, as shown in this case, without a license, and proper record of it violated both the spirit and the letter of the law The fact that he studiously abstained from calling his work on patients a "treatment" of them but instead an "adjustment of a displacement" of them could have no possible effect to relieve him of the penalties of the law which he violated No sort of substitution of other words for those used in the statute, or refraining from using them could change the law The fact that in his advertisements posted on his home and office and to his patients he stated specifically that he did not profess to do nor do, the things that the statute denounces yet, when it was unquestionably shown that he did those very things could not possibly have the effect to put him without the pale of the law His assertions in his advertisements and to his patients that he was not a doctor or surgeon, and that he did not treat disease, etc, was clearly an attempt to evade the law, and should have deceived no one. No other practitioner of any other school of medicine, whether he be called doctor, surgeon or otherwise, or whatever his method or system, treats the disease, etc, as contradistinguished from the patient suffering from the disease, etc They each and all treat the patient in order to relieve him from the disease and suffering, and thereby assist Nature to heal him, as the defendant was shown to have done the several persons, his patients, who testified herein Each practitioner may have a different system or method, but the object and purpose of each is to accomplish the same result The court can see no possible reason, and none was shown in this record, why the defendant should be exempted from procuring and registering his license to practice, when every other practitioner from every other school is required to do so His school of medicine, or science, or practice, or adjustment, or whatever he may choose to call it is clearly embraced by the Texas law, as prohibiting him from practicing it on human beings for pay, without first procuring and having a license duly recorded If he desires to practice his profession, and does so, he should first procure and record his license to do so under the law, as every other practitioner is required to do and does, and, if he refuses to do this then he must suffer the penalty of his own acts Nor does the court find anything to relieve him, in his contention, on a motion for rehearing, that the medical practice act, as it now appears in the revised civil statutes and penal code, was not in fact enacted at the time it purports to be, but that the act, as it first reached the governor's hands, instead was enacted and became the law, and that therefore he was convicted under what purported to be the law, but which in fact and reality was not the law The court considers that, in any and all events the law under which the defendant was convicted was in every way valid and legal

Failure to Diagnose Diphtheria

(Hrubes vs Faber et al (Wis), 157 N W R 519)

The Supreme Court of Wisconsin reverses a judgment rendered in favor of the plaintiff for damages for the death from diphtheria of his daughter a little over 7 years old the death being alleged to have been caused by unskilful and improper treatment by the defendant The court says that the child first complained of sickness on Friday afternoon She was at school in the morning, but at home in the afternoon The only definite symptom was headache She did not complain of anything else and did not complain of sore throat at any time The defendant saw her on Saturday afternoon about twenty-four hours after she began to complain She then complained of headache, and the defendant found a swelling in the back of the throat There was no redness, the color was like the rest of the throat, only thickened her general appearance was favorable, and she had no fever She would not hold still and the defendant advised her father to bring her to his office the next morning in order that a more thorough examination might be made At that time the defendant, assisted by another physician administered enough chloroform to relax the patient, and the defendant made a careful examination of the swelling and the throat, and found no membrane present, and discovered no other symptoms which caused him to suspect the presence of diphtheria The other physician, who administered the anesthetic, examined the throat, and outside of a small, circumscribed area on the left side, which he thought looked like an abscess and which might contain pus or fluid there was no swelling or any sign of membrane and no signs or symptoms of any serious condition, outside of what appeared to be an abscess The condition of the throat did not, in the opinion of such other physician, resemble diphtheria at all The patient returned to her home, and the defendant did not see her again until Tuesday evening when he was requested by the father to visit her again, which he did at her home At that time she walked into the room where he was sitting and he made a slight examination She had the same swelling, slightly enlarged, there were no local signs to indicate the presence of diphtheria On Tuesday evening the swelling was more pronounced, and particularly on the outside At that time the defendant prescribed the use of an ointment which is commonly used in treating mumps, and gave no other treatment He did not see the child again, and she died without further treatment or examination the next day, Wednesday, at 11 a m At the time of her death she was unconscious, in great pain, and was bleeding from her mouth and nose, and catching for breath After consultation with the health authorities of the city, the defendant signed a death certificate stating the cause of death to be diphtheria The jury found (1) that the defendant failed to exercise ordinary care in diagnosing or treating the case, (2) that such failure on his part to exercise ordinary care caused the death of the child, (3) that he did not on Sunday advise the plaintiff to get a physician other than himself to treat the child, (4) that he did not make known to the plaintiff that he did not want to take cases requiring visits or treatment outside of his office, (5) that the damages resulting from the death were $800 But the court holds that the verdict of the jury to the effect that the failure of the defendant to exercise ordinary care and skill resulted in the death of the child was a mere conjecture and had no foundation, substantial or otherwise, in the evidence, Verdicts cannot rest in mere conjecture It followed that the defendant's motion for judgment notwithstanding the verdict should have been granted, and a judgment for the defendant is ordered, dismissing the plaintiff's complaint on the merits The law does not require impossibilities or even the exercise of the very highest degree of skill or the utmost care, but only such reasonable care and skill as is usually possessed by physicians of the same school in the locality The presence of a membrane not being established, there was no evidence in this case on which the jury could base a verdict finding that the defendant did not exercise ordinary care

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Society Proceedings

COMING MEETINGS

Am Assn for the Study and Prev of Inf Mort Milwaukee Oct 19 21
American Association of Railway Surgeons Chicago Oct 17 19
American Public Health Association, Cincinnati, Oct 24 27
Clinical Congress of Surgeons Philadelphia Oct. 23 28
Kentucky State Medical Association Hopkinsville Oct 24 27
Southern Medical Association Atlanta Ga, Nov 13 16
Virginia State Medical Society Norfolk Oct 24 27

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Sixty Sixth Annual Meeting held at Scranton Sept 18 21 1916

The President, Dr John B McAlister, in the Chair

Epilepsy as a Medicolegal Problem

Dr N S Yawger Philadelphia Medicolegally, the mental manifestations are grouped as 1 Paroxysms in which the individual is not insane but in which he may be irresponsible, these are (*a*) irresistible impulses or impulsive acts, (*b*) the state of automatism 2 Paroxysms in which the individual is insane, these may be (*a*) acting under the domination of an insane delusion, (*b*) in a maniacal epileptic outbreak While these patients often have long intervals of lucidity, they are highly dangerous This emphasizes the desirability of having the insane detained under the more secure form of committment by court procedure rather than by certificate It might be desirable that all cases of insanity of considerable duration in which confinement is necessary should be committed similarly

DISCUSSION

Dr Hugh E Meredith Danville If the epileptic is mentally defective and irresponsible, no punishment should follow a crime committed Of the approximately 2,000 epileptics in Pennsylvania, many are cared for in insane institutions, and of the number passing under my observation, I have not found one not legally committed in accordance with the lunacy act of 1883 Institutions for the insane are not the places for these patients I see no reason why the several classes of epilepsy could not be cared for in a properly organized institution in which they may receive special attention and treatment

Dr William H Carmalt, New Haven, Conn The state of Connecticut has endeavored to meet legally the care of epileptics by the establishment of a state farm for their care and treatment where, if confirmed epileptics, they may be kept indefinitely Another method, less satisfactory in its working is a law prohibiting the marriage of epileptics and the feebleminded and imposing a fine of $50 on any one performing the ceremony Unfortunately, no one has been fined for making these marriages The law, however, acts as a moderate deterrent

Care of the Indigent Insane

Dr Charles W Burr, Philadelphia My object is to arouse physicians to active endeavor in the enforcement of wise legislation in the matter of the care of the indigent insane, and to urge that the solution of this problem lies in the state assuming the entire burden and control of these whole Future work will be to prevent insanity by a real system of eugenics—not the newspaper kind A certain proportion of the income of the state should by law be appropriated for the care of the insane, there should be a board appointed by the governor, the assembly or both, the members of which should serve terms of given length To this board should be left entirely the expenditure of funds It would seem better that each local hospital have its own *board of managers, appointed by the central board, and* dependent on it for money The medical member of the central board should decide in doubtful cases whether or not any given patient needs longer hospital care The board controlling the insane, feebleminded and epileptics should be entirely separate from the board of charities *Acute and* chronic insanity should be treated in separate institutions The hospitals for the acutely ill should have a corps of research workers in the real meaning of the phrase The chronic insane should not be herded in great institutions, doing, seeing, hearing nothing, the institutions should be small, in the country—real farms While it is manifest that the state cannot undertake at once the entire care of the indigent insane, it can and ought to adopt such state care as a permanent policy, and then gradually evolve the whole question

DISCUSSION

Dr Charles H Frazier, Philadelphia About three years ago the Public Charities Association, which has for its object the adoption of more efficient methods of caring for the state's dependent people, made a survey of all the institutions in this state caring for the insane This survey shows that *in many* instances our county institutions were merely adjuncts to almshouses, improperly manned as to medical *officers* and attendants, without proper facilities for the treatment of the insane, giving, in fact, merely custodial care rather than medical treatment To say that it is cheaper to care for the insane in county hospitals is a *discreditable* argument for the state to use against the care of this unfortunate class To carry out the plan suggested by Dr Burr,
this society should, through its Committee on Public Pol
and through its Subcommittee for the Promotio
Efficient Laws for the Insane, be prepared to int
tain remedial measures at the next meeting of
ture, and, that the county medical societies sho
committees, the members of which shall famili
selves with the conditions prevailing in their coun
or almshouses that they may from first-hand
advise those representing them in the senate and

Dr Owen Copp, Philadelphia Adequacy in med
ination and treatment is the first and indispensab
ment of any system of provision for these people
ence teaches that the state alone can reasonably be to provide sufficiently for medical treatment and scientific study of these classes The so-called economy of local and county care is delusive in that it is a saving by deprivation of sufficient medical attention, facilities for treatment, precautions against secondary infections and reproduction of defectives The development of the colony idea in the care of the insane will eventually completely surpass the claims made by the advocate of county asylums The problem is medical and will find solution only through the action of the *medical profession Its neglect is a menace to mental health* and racial soundness

Dr John A Lichty, Pittsburgh Apparently little is to be hoped for from the standpoint of cure We must, therefore, prevent the condition so far as possible through a study of its cause We need a state organization for the care of the insane which will allow us to inquire concerning conditions and enable us to correct that which is detrimental in the life of the patient

The Workmen's Compensation Law

Dr William L Estes, South Bethlehem At the request of the board of trustees that its chairman present suggestions for amendments, and after consideration of suggestions received from the various county societies, the following *amendments are proposed 1 Define major operation* as used in the wording of the act 2 Extend the period of direct payment for treating the injured workman to thirty days 3 Increase the limit of payment for "reasonable surgical, medical and hospital services," etc The matter of proper fees in return for treatment of injured employees is apparently the crux of the whole difficulty The only efficient remedy in the present business error seems to be thorough organization through the county medical societies in demanding from insurance companies the same rate of remuneration each physician is entitled to and is accustomed to receive for similar services from members of the community in which he lives If the tendency of the law is to reduce the remuneration of physicians, it is necessary and proper to amend it The medical profession has a right to be consulted in the drafting of these laws

Internal Secretions and Their Relation to Nervous Disorders

Dr Seymour DeWitt Ludlum, Philadelphia Studying nervous cases by their physiologic symptoms points toward etiologic factors which, taken in consideration with the morphology of the patient and with Abderhalden's reactions done on the blood serum for internal secretions, give quite definite conceptions of backwardness, some forms of insanity, neurasthenia, dystrophies, etc

Fecal Incontinence

Dr Samuel Goodwin Gant, New York The loss of sphincter control is in the majority of cases due to improper treatment of anorectal wounds The condition will become rare when surgeons learn to treat fistula-in-ano properly and cease divulsing the sphincter rapidly with the finger and mechanical dilators and decline to perform Whitehead's operation for hemorrhoids The cause of fecal incontinence
nonoperative (brain and cord diseases, ulcerative
rectal cancer, injuries to the sphincters, etc) and
of sphincter control is due to imperfect drain-
or mucosa to grow into cut, useless
of wound, etc Division of the internal
er does not materially increase the
severing the nerves controlling
e treatment is unsatisfactory,
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tissues

Cooperation of Physician and Surgeon in After-Treatment of Patients Operated on for Diseases of Gastro-Intestinal Tract

Drs Edward H Goodman and John Speese Philadelphia Cooperation of physician and surgeon should begin immediately after operation during the stay in the hospital Even greater cooperation should follow in cases in which the physician is consulted in a case surgical from the beginning but in which he drops out after examination and the surgeon again assumes entire charge Such a practice is unfair to the patient, increases the burden of the surgeon, and ignores certain potentialities of the internist valuable to patient and surgeon If from the hospital the patient returns to a physician not familiar with his idiosyncrasies, the hospital physician should fully inform the medical attendant of all important facts relative to the patient. It is unfair to the patient to discharge him from the surgical ward, believing him cured, and neglect to instruct him as to his mode of living during the ensuing six to twelve months or longer Comparatively few patients are immediately relieved by operation Each patient, though believing himself to be in perfect health, should report to his physician at regular intervals

DISCUSSION

Dr John A Lichty, Pittsburgh This cooperation should be operative and preoperative as well There is opportunity for meddling on the part of the internist, and there are surgeons who are dogmatic to an unpleasant degree Reasonable men, however, will get together, and as consequence have satisfactory results in these very difficult cases

Clinical Interpretation of the Wassermann Test

Drs John A Lichty Pittsburgh, and James H Whitecraft, Wilkinsburg The Wassermann test, while not absolutely certain, is the most valuable laboratory aid in the diagnosis of syphilis A negative test [illegible] suspected cases should be repeated before the suspicion [illegible] dropped often after a provocative dose of salvarsan A negative reaction may be due to previous treatment which has not been curative The influence of specific treatment on clinical manifestations of syphilis tends to show the reliability of the Wassermann test The existence of a positive Wassermann should not be construed to mean that syphilis is the only condition present which requires treatment

Modern Diagnosis and Results Clinically, Serologically and Sociologically of Syphilis, Treated with Salvarsan and Its Substitutes

Dr B A Thomas, Philadelphia The treatment of syphilis remains empiric The ultimate proof of cure rests rather on complete freedom of symptoms for a generation or more The Wassermann reaction furnishes the best control of treatment and is the most reliable index of cure subsequent to proper treatment The sheet anchor in the treatment of syphilis is salvarsan, neosalvarsan or one of their substitutes It is of paramount importance however that the injections of arsenobenzol in the beginning be administered as early as possible and intensively in full doses commensurate with the physiologic tolerance of the patient Serologically judged on a three months' to a five year duration, syphilis in the chancre stage, if diagnosed early, may be cured by two injections of salvarsan or neosalvarsan, if diagnosis be made before the advent of a positive Wassermann, one dose of either of these drugs may be sufficient. Secondary syphilis seems to do just as well without as with mercury provided enough salvarsan or neosalvarsan is given to produce a negative Wassermann The serologic results in tertiary syphilis treated intensively with salvarsan and its substitutes are not so brilliant as those of the secondary period The best substitute for salvarsan and neosalvarsan is our American arsenobenzol The French preparation of arsenobenzol and the Canadian diarsenol may be just as efficient as salvarsan and neosalvarsan but because of their greater tendency to toxic phenomena are not destined to supersede the German products The arylarsonate soamin and sodium cacodylate both clinically and serologically, have no place in the effective treatment of syphilis

Treatment of Syphilis by Salvarsan Controlled by the Wassermann Reaction

Dr John D Wilson Scranton My experience with these cases has led me to believe that salvarsan is most useful during the early active period of the disease and that, small frequently repeated doses namely, salvarsan, from 0 3 to 0 4 gm every week or ten days for twelve injections, and in conjunction with active mercurial treatment, should constitute the first course of treatment in any new active case The after-treatment is to be determined by the return of suspicious symptoms and by the Wassermann reaction on the blood and spinal fluid

DISCUSSION

Dr George Morris Piersol, Philadelphia The successful treatment of syphilis depends on its early recognition and prompt management The secretion of all doubtful venereal sores and early mucosal lesions should be examined for the *Spirochaeta pallida* in both of which lesions it is abundant If the spirochetes cannot be found a definite prognosis should not be given until repeated examinations have been made and the Wassermann reaction thoroughly tried out The time of the appearance of the Wassermann is subject to wide individual variations The Wassermann reaction is not a primary but a secondary aid to diagnosis In many of the more obscure visceral lesions of the nervous system, cardiovascular apparatus and in latent hereditary syphilis, very definite clinical manifestations may be present and yet the blood Wassermann reaction negative. Conversely, while a positive blood Wassermann reaction means that a syphilitic infection is present, it far from proves that the trouble of which the patient complains is due to this infection No apparently cured case of secondary syphilis should be discharged until spinal puncture has demonstrated that involvement of the nervous system is absent The present equipment of the majority of our state [illegible] hospital dispensaries for the care of syphilitic cases is totally inadequate for the thorough treatment of active syphilitics Attention should be directed to the desirability of performing the gold sol test, or Lange colloidal gold test on all spinal fluids in addition to the Wassermann cell count and globulin tests In primary infections it is possible to abort the condition by the intensive use of salvarsan alone, but such treatment must be adequate The criteria of a cure depend on a repeatedly negative Wassermann reaction for at least two years after a provocative injection of salvarsan and a normal spinal fluid

Dr John A Kolmer Philadelphia Experiments and clinical data indicate the superior spirocheticidal activity of salvarsan and arsenobenzol over neosalvarsan Sodium cacodylate was found absolutely without effect in experimental trypanosomiasis and this drug should not be relied on to destroy *Spirochaeta pallida* In an experimental study of the toxicity of various mercurials, we find that insoluble salts of mercury, as the salicylates, are very slowly absorbed from the subcutaneous and muscular tissues Physicians should therefore avoid administering such preparations at very close intervals in order to avoid cumulative effects, particularly expressed in renal irritation as shown by the presence of albumin and casts in the urine My colleague, Dr Schamberg, always continues treatment until the Wassermann reaction is negative with cholesterinized antigens This result can be obtained only after the administration of a large number of doses of salvarsan I believe it a serious error to discontinue treatment on the basis of a negative test with an antigen of alcoholic syphilitic liver, because experience has taught me that a number of these persons are still Wassermann positive and can be rendered Wassermann negative with additional treatment I have used the Hecht-Gradwohl reaction as a control on the Wassermann and find that it yields about 12 per cent more true positive reactions than the Wassermann I have confirmed the observations of Sherrick that normal persons taking potassium iodid may yield positive syphilitic reactions The influence of the iodids should therefore, be carefully ruled out before conducting this test

(To be continued)

Medical Literature

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49 Formation of Methemoglobin by Streptococcus Viridans F G Blake Boston —p 315
50 Further Study of Gastric Ulcers Following Adrenalectomy F C Mann Rochester Minn —p 329
51 *Agglutination of Treponema Pallidum in Human Syphilis J A Kolmer, S Broadwell, Jr, and T Matsunami, Philadelphia —p 333
52 Study of Physiologic Activity of Adenomata of Thyroid in Relation to Their Iodin Content A Graham Cleveland —p 345
53 *Spontaneous Diabetes in Dog E B Krumbhaar, Philadelphia —p 361
54 Technic of Cultivating Human Tissues in Vitro R A Lambert New York —p 367
55 *Study of Serum Salvarsanized in Vitro H F Swift New York —p 373
56 Latent Period in Growth of Bacteria A M Chesney New York —p 387
57 *Rapid Method for Diagnosis of Renal Tuberculosis by Use of Roentgenized Guinea Pig I J Morton, Boston —p 419

50 **Gastric Ulcers Following Adrenalectomy**—In order to determine whether the acid medium was the important factor in the production of acute stomach ulcers, a loop of the first part of the jejunum, varying in length from 6 to 12 cm was functionally resected under anesthesia and implanted in the posterior wall of the stomach in the region of the antrum pylori The continuity of the intestine was maintained by an intestinal anastomosis The dogs quickly recovered from the operation and maintained excellent health for many months Animals killed at various periods after operation demonstrated that the transplanted mucosa underwent definite changes, but ulcers did not develop except in one instance in which an ulcer was found around a retained silk suture In four of these animals after a considerable length of time had elapsed, the right suprarenal was removed, and a few months later the left gland was extirpated All developed the typical symptoms of suprarenal insufficiency and died at various times after the removal of the last gland In all these animals definite lesions of the gastric mucosa were found at necropsy In three there were ulcerations, while in one the mucosa was injected only and showed areas of erosion In three the jejunal transplant appeared exactly similar to the control In one there appeared to be a slight loss of jejunal mucosa in pin-point areas which microscopically proved to be small ulcers

51 **Agglutination of Treponema Pallidum**—The authors believe that with a suitable culture or cultures well marked agglutination of *Treponema pallidum* in dilutions of 1 5 or better 1 10 and higher, indicates pallida infection and may prove of value in the diagnosis of isolated cases, particularly in the later stages

53 **Spontaneous Diabetes in Dog**—The clinical picture in the case of this dog was one of a true diabetes mellitus first attracting attention after miscarriage Although the G N ratio sank from 3 1 on 10 gm of nitrogen to 1 7 1 after three days' fasting the disease progressed steadily in spite of a long continued carbohydrate-free diet Together with the usual complications of diabetes, a malignant tumor of the thymus developed so that after five months' observations a slow death was forestalled by chloroform The most striking feature at necropsy was the large, apparently normal pancreas, which exhibited histologically marked changes in the islands of Langerhans extreme hydropic degeneration and exhaustion of granules, involving both alpha and beta cells, but especially the latter, and replacement of some islands by fibrous tissue

55 **Serum Salvarsanized in Vitro**—Swift summarizes his study as follows addition of salvarsan to serum in vitro produces a spirocheticidal mixture which is increased in potency by heating The heated serum of salvarsan treated patients is more spirocheticidal if it has been in contact with the clot over night than if it has been separated immediately after coagulation This is not true with the serum from blood which has been salvarsanized in vitro The addition of salvarsan directly to serum produces a more potent mixture than results from the serum from blood to which salvarsan has been added in equivalent amounts The increase in activity of salvarsanized serum produced by heating to 56 C is due in part to the removal of inhibitory substances in the serum and in part to a direct increase in spirocheticidal power in the heated salvarsan Both salvarsanized and neosalvarsanized serum are rendered more spirocheticidal by heating A more active spirocheticidal mixture is produced by mixing small amounts of salvarsan with the serum of a salvarsan treated patient than with normal serum

57 **Diagnosis of Renal Tuberculosis**—Morton says it is possible to reduce the resistance of guinea-pigs to tuberculosis by Roentgen exposures so that when animal inoculation is required for a diagnosis a much quicker result may be had than by the use of normal animals In renal tuberculosis when it is necessary to resort to the use of animals it ordinarily requires from five to seven weeks, while by the use of roentgenized guinea-pigs the diagnosis can be made in from eight to ten days The resistance can be sufficiently lowered by one massive dose of Roentgen ray administered either shortly before or after the inoculation of the material to be tested The lesions are so marked in these animals that the diagnosis is certain after the interval indicated above

Journal of Infectious Diseases, Chicago

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58 *Etiology of Cholecystitis and Gallstones and Their Production by Intravenous Injection of Bacteria E C Rosenow, Rochester Minn —p 527
59 Modification of Romer s Intracutaneous Method for Determination of Small Amounts of Diphtheria Antitoxin in Blood Serums A Zingher, New York —p 557
60 Diphtheria Bacilli in Microscopic Sections of Tonsils from Diphtheria Carriers M W Brown, Chicago —p 565
61 Attenuation of Hog Cholera Virus D J Healy and E J Gott Lexington Ky —p 569
62 *Specificity of Streptococci A T Henrici, Minneapolis —p 572
63 Correlation of Certain Reactions of Colon Bacilli and Like Organisms with Source F Hulton, Philadelphia —p 606
64 *Fate of Mammalian Tuberculosis Bacillus in Sparrows and Chickens L Van Es and A F Schalk, Agricultural College N D —p 614
65 Experimental Epidemiology in Tuberculosis A Distaso Cardiff Wales —p 628
66 Immune Reactions in Scarlet Fever Antigenic Properties of Bacteria Found in Scarlatina G I Dick and G R Dick, Chicago —p 638
67 Presence of Soil and Fecal Strains of Organisms of Colon Aerogenes Group in Waters of Kansas M Greenfield Lawrence Kan —p 647
68 Milking Machine Source of Bacterial Contamination of Milk G F Ruediger La Salle —p 652

58 **Etiology of Cholecystitis and Gallstones**—Rosenow records the results of cultures by special methods from the liquid contents of the gallbladder, from the centers of gallstones, from the wall of the gallbladder, and from the adjoining lymph glands removed at operation, in a series of cases of cholecystitis and the results of animal experiments with the bacteria thus isolated These results it is believed, throw definite light on the mechanism of the occurrence of cholecystitis and gallstones The cultures were made from material removed at operation in 47 cases The bile or other fluid content of the gallbladder was cultured in 29 cases, 13 of which showed no bacteria In the remaining 16 cases the streptococcus was not found in pure culture being found in conjunction with the colon bacillus in 5 instances, and with other bacteria in 2 The colon bacillus was found in pure culture 4 times Cultures from the nuclei of the common types of gallstones were made in 33 cases, showing no bacteria In the remaining 29 cases the streptococcus was isolated in pure culture in 17, and the colon bacillus in pure growth in 1 The streptococcus occurred with the colon bacillus in 3 cases, and with other bacteria in 4 Cultures made from 4 typical cholesterin stones showed no streptococci, 2 were sterile, 1 yielded a few colonies of a diphtheroid bacillus, and 1 the colon bacillus Cultures from the wall of the gallbladder were made in 32 cases, 5 of which were sterile Of the remaining 27 the streptococcus was found in pure culture

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Diseases of Children, Chicago

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1 Protein Metabolism of Infant F B Talbot and J L Gamble Boston—p 333
2 *Bacteriology of Urine in Healthy Children and Those Suffering from Extra Urinary Infections C Beeler and H F Helmholz *Boston*—p 345
3 *Frequency of Hereditary Syphilis F S Churchill and R S Austin Chicago—p 355
4 Clinical Course and Physical Signs in Hereditary Syphilis of Early Age A Post, Boston—p 364
5 Clinical Signs and Diagnosis of Late Hereditary Syphilis P C Jeans St Louis—p 374
6 *Comparative Study of Luetin and Wassermann Reactions in Infancy and Childhood L R DeBuys and J A Lanford, New Orleans—p 387
7 *Treatment of Hereditary Syphilis P H Sylvester Boston—p 395
8 Review of Literature of Syphilis in Infancy and Childhood H P Towle, Boston—p 406

2 **Urine Bacteriology**—In 118 specimens of carefully catheterized urine from sixty-one different girls examined by Beeler and Helmholz, sixty-one were sterile and fifty-seven contained bacteria Of those from normal infants, thirteen were sterile and eleven contained bacteria Of those from extra-urinary infections in patients under 2 years of age, none were sterile and twenty-four contained organisms In those from girls over 2 years, thirty-eight were sterile and twenty-two contained bacteria The number of bacteria found in Series 1 was considerably larger than in Series 2 This may be explained by the fact that in the older children one can cleanse the urethral orifice much easier than in the infant and introduce the catheter directly into the urethra The bacterial flora was practically the same in both series, gram-positive cocci and diphtheroid organism predominating the former being present in practically every case in which any organisms were found In no instance were gram negative bacilli found in such numbers in both specimens that it seemed probable that it was more than an accidental contamination from the urethra

3 **Frequency of Hereditary Syphilis**—Intensive study by Churchill and Austin of a group of 695 patients in the Children s Memorial Hospital, during the winter of 1915-1916, the study embracing both clinical and laboratory methods of investigation, shows an incidence of 3 3 per cent of hereditary syphilis The amount of hereditary syphilis among the hospital infants and children in New York, St Louis, San Francisco and Chicago ranges from 2 to 6 per cent

6 **Tests for Syphilis**—According to DeBuys and Lanford the Wassermann reaction is not so valuable as the luetin test in cases of *hereditary syphilis* Their series shows that it is impossible for a mother to give birth to a child who gives positive laboratory tests for congenital syphilis without herself giving positive tests While the authors believe that the luetin test is of more value in being more often positive than the Wassermann, they do not believe that it should displace the Wassermann, as both tests, it would seem, serve distinct purposes the Wassermann to give evidence of the presence of antibodies in the circulation, indicating an active process, while the luetin not only gives this evidence, but also indicates an existing syphilitic condition even though it be inactive The luetin test is not without its disadvantages, as it requires considerable experience in differentiating the lesion from the simple reaction produced by the intradermal injection of sterile inert foreign material It is also influenced by the administration of certain drugs, which may give rise to a pseudoreaction, thereby adding to the possible inaccuracy in the interpretation of its reading Therefore, luetin reactions should not be considered negative until sufficient time shall have elapsed to warrant such a reading

7 **Treatment of Hereditary Syphilis**—Sylvester advises that fetal syphilis should be treated by treating the pregnant syphilitic mother vigorously The balance of evidence shows that the child is much benefited thereby Arsenic should be used in fairly large doses if immediate intense action is desired Mercury in one form or another should be used in conjunction with arsenic and continued a long time after all evidence of the disease has disappeared Treatment should be persisted in for at least two years, after which a negative Wassermann, after six months without treatment, may be considered evidence of a cure Neosalvarsan appears to be the most favored arsenical Lesions other than of the central nervous system may be readily relieved Latent cases should be treated

American Journal of Public Health, Boston

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9 Sixty Years of Providence Health Department C V Chapin Providence R I—p 905
10 Relative Values in Public Health Work F Schneider Jr, New York—p 916
11 *Harm Done in Ascribing All Babies Sore Eyes to Gonorrhea* C C Van Blarcom New York—p 926
12 Period of Life at Which Infection from Tuberculosis Occurs Most Frequently S A Knopf, New York—p 934
13 Efficiency of Venereal Clinics P S Platt New York—p 953
14 Industrial Hygiene and Health Insurance J B Andrews—p 959
15 Registration of Non Resident Deaths W H Davis Boston—*p 964*
16 Census of Contagious Diseases of 8,786 Children E C Henderson London—p 971
17 Relation of Hospital and Dispensary to Occupational Diseases W C Thompson New York—p 982
18 Handling of Shucked Oysters C Bates, Washington, D C—p 987
19 *Suggestions for Test to Measure Drainability of Emscher Tank Sludge* W L Stevenson Philadelphia—p 991
20 Providence City Hospital D L Richardson, Providence, R I—p 995

American Journal of Roentgenology, New York

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21 Roentgenoscopy of Respiratory Organs A W Crane, Kalamazoo Mich—p 419
22 Congenital Anomalies and Variations of Bony Skeleton as Revealed by Roentgen Ray A Hartung, Chicago—p 430
23 Idiopathic Infantile Osteopsathyrosis E S Blaine, Chicago—p 438
24 Roentgenographic Diagnosis of Renal Calculus J Friedmann, New York—p 443

Arkansas Medical Society Journal, Little Rock

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25 Erotomania T Douglass, Ozark—p 67
26 Healthy Citizen J T Clegg, Siloam Springs—p 77

Boston Medical and Surgical Journal

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27 Importance of Early Reduction of Fractures with Displacement W Darrach, New York—p 437
28 Treatment of Hip Fractures F J Cotton, Boston—p 438
29 Operative Treatment of Fracture of Patella C L Scudder and R H Miller, *Boston*—p 441
30 Some Aspects of Treatment of Compound Fractures Under Civil and Military Conditions D Cheever Boston—p 442
31 Flexed Spica and Wheel Chair in Treatment of Fracture of Neck of Femur G A Moore Brockton—p 448

Canadian Medical Association Journal, Toronto

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32 Epidemic of Pneumococcus Infection T McCrae, Philadelphia—p 769
33 Experiences in Surgery of Present War E A Archibald—p 775
34 Irritable Heart of Soldiers (Soldier's Heart) R D Rudolf Toronto—p 796
35 Field Ambulance and Its Organization W L Watt—p 811
36 Treatment of Diphtheria at *Alexandra Hospital Montreal* H B Cushing and E V Murphy, Montreal—p 817

Cleveland Medical Journal

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37 Fecal Fistulae G W Crile Cleveland—p 507
38 Etiology and Symptomology of Acute Poliomyelitis H C King, Cleveland—p 510
39 Recent Advances in Gynecology and Obstetrics W D Fullerton Cleveland—p 514
40 Neurologic Reviews T S Keyser Cleveland—p 516
41 Progress of Medicine H Feil, Cleveland—p 521
42 Recent Advances in Pediatrics H C King, Cleveland—p 523

Florida Medical Association Journal, Jacksonville

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43 Fracture of Neck of Femur J Reeve, DeLand—p 65
44 Fractures at Elbow R A Ely, *Tampa*—p 69

in 10, the colon bacillus in 1, mixtures of streptococcus and colon bacillus in 8, and the streptococcus with other bacteria in 3 Of the cases in which the fluid contents were sterile the streptococcus was isolated from the wall of the gallbladder in 8, and from the center of gallstones in 6 The adjacent lymph glands were cultured in 8 cases, 1 gave no bacteria, 4 showed pure cultures of the streptococcus, 1 the streptococcus and a diphtheroid bacillus, and 1 a pure culture of colon bacillus *Bacillus welchii*, *Staphylococcus aureus*, diphtheroid bacilli, fusiform bacilli, *Bacillus mucosus* and the typhoid bacillus were found occasionally

62 **Specificity of Streptococci**—Fifty-three strains of streptococci from various sources were inoculated by Henrici into 225 rabbits, and the virulence and elective organ affinities were compared with the powers of hemolysis and carbohydrate fermentation The carbohydrate fermentation tests are of no significance from the standpoint of virulence, and of slight or doubtful significance from the standpoint of tissue localization The hemolytic streptococci are more virulent than the nonhemolytic but the two classes localize in the same tissues with equal frequency Henrici does not believe that we are not justified, from evidence obtained by rabbit inoculation experiments, in recognizing any particular class of streptococci as specific for rheumatic fever, since the various rheumatic lesions, arthritis, myocarditis, endocarditis, and myositis, may be produced by some strains in each of the varieties, and are produced in equal proportion by both hemolytic and nonhemolytic strepococci Streptococci of various kinds may produce in rabbits types of myocarditis which cannot be differentiated from the Aschoff-Geipel nodules generally considered diagnostic of rheumatism Experimental streptococcal endocarditis usually develops bv implantation rather than by embolism

64 **Fate of Mammalian Tubercle Bacilli in Birds**—It was found by Van Es and Schalk that a considerable number of birds into which mammalian tubercle bacilli are introduced, either by ingestion or by inoculation, die in a highly emaciated state As a result of the incorporation of such bacilli into the bodies of birds, the latter may retain the organisms for long periods with their pathogenic characteristics fully preserved In consequence it is well within the range of possibility that birds may serve as intermediary carriers and transmitters of mammalian tuberculosis

Journal of Laboratory and Clinical Medicine, St Louis

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69 Poisonous Proteins V C Vaughan Ann Arbor Mich—p 851
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70 *Peripheral Action of Opium Alkaloids with Special Reference to Bladder D E Jackson St Louis—p 862
71 *Antidotes in Mercuric Chlorid Poisoning—Experimental Study B Fantus Chicago—p 879
72 Bence Jones Protein W A Groat and R K Brewer Syracuse N Y—p 895
73 Detection of Small Amounts of Blood T H Kelly Cincinnati —p 897
74 Temperature Reactions in Anaphylaxis M I Smith Ann Arbor Mich—p 902
75 Behavior of Certain Nitrogenous Metabolites in Blood in Nephritis H T Karsner, Cleveland—p 910
76 New Container for Pathologic Specimens C Kellner New Haven, Conn—p 917
77 *Simple Method of Concentrating Tubercle Bacilli in Sputum and Urine W Krauss and J S Fleming Memphis Tenn—p 919

70 **Peripheral Action of Opium Alkaloids**—The experiments described by Jackson prove that those opium alkaloids which belong to the phenanthrene series, that is morphin, codein, thebain, heroin dionin, etc, in large intravenous doses cause in dogs a profound contraction of the bladder A similar contraction of the bronchioles is produced by these drugs Jackson failed in a few experiments to obtain this contraction with some other ones of these alkaloids, notably papaverin cryptopin and cotarnin Apparently the contractions of the bladder and of the bronchioles produced by these drugs are strictly analogous and in all probability of identical origin The contractions in both organs occur simultaneously, are usually of approximately the same proportions, last for corresponding periods of time and when the initial contraction is maximal then later injections of any sized doses of either the initial drug or of any other of the series will not produce any further contraction whatever of either bladder or bronchioles These reactions closely resemble those produced bv drugs which first simulate and secondarily paralyze nervous structures, such, for example, as the action of lobelin on ganglia But so far as Jackson has been able to determine by pharmacologic means no paralysis of either nervous or muscular structures is produced by these alkaloids

71 **Antidotes in Mercuric Chlorid Poisoning**—Fantus says that egg albumin is of little value as an antidote to mercuric chlorid, unless it is given immediately after the poison is swallowed Milk and serum albumin are worthless Hall's solution (potassium iodid and quinin), is useless as an antidote Sodium bicarbonate and sodium acetate possibly have a moderate antidotal value Sodium carbonate is of no value Potassium bitartrate and sodium sulphate have no antidotal value Stannous chlorid has little antidotal value Calcium sulphite is probably too toxic to be of use as an antidote Sodium phosphite alone has no antidotal value, but mixed in a certain proportion with sodium acetate it has antidotal efficiency Sodium hypophosphite mixed with a certain proportion of sodium acetate or of hydrogen peroxid is also highly efficaceous as an antidote As the result of his studies, Fantus recommends the following antidotal treatment for mercuric chlorid poisoning immediate administration of a tablet composed of sodium phosphite, 0 36 gm, and sodium acetate, 0 24 gm If this be not available, give the following sodium hypophosphite, 1 00 gm, water, 10 00 mils and hydrogen peroxid, 5 00 mils If the amount of the poison taken be known, ten times as much of the hypophosphite should be given as poison was taken As this might require a large and possibly harmful amount of hypophosphite, it should immediately be followed by copious lavage, with a very dilute solution of the antidote This may be followed by a safe dose of the antidote, which is to be retained, and which might be repeated every eight hours for several days This antidotal treatment might be combined with some such eliminant treatment

77 **Method of Concentrating Tubercle Bacilli in Sputum and Urine**—For sputum place 5 c c sputum in a 15 c c centrifuge tube add 5 c c of a 10 per cent sodium chlorid solution and shake in a shaking machine, or by hand if none available, until it is a thin homogenous fluid as free from clumps as possible Add 0 5 c c of gasoline and repeat shaking process until the gasoline is thoroughly emulsified Centrifuge at a low rate of speed until the gasoline forms a supernatant liquid immediately beneath which is a scummy layer in which tubercle bacilli will be found, if present in original specimen For urine place 10 c c urine in 15 c c centrifuge tube and centrifuge three minutes at a rapid rate of speed Pour off supernatant fluid To the sediment add 10 c c of original urine and 1 gm of sodium chlorid Shake thoroughly or until the sodium chlorid is dissolved, and add 0 5 c c of gasoline Shake again for about five minutes, then centrifuge slowly The scum beneath the gasoline contains tubercle bacilli, if present

Journal of Medical Research, Boston

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78 *Studies in Immunity to Tuberculosis Cutaneous Reaction to Tuberculo Protein A K Krause Saranac Lake, N Y—p 1
79 *Id Anaphylactic State in Its Relation to Resistance to Tuberculous Infection and Tuberculous Disease A K Krause Saranac Lake N Y—p 25
80 *Id General Tuberculin Reaction A K Krause, Saranac Lake, N Y—p 43
81 Endameba Buccalis in Mouths of Institutional Children O W H Mitchell W L Culpepper and W D Ayer, Syracuse N Y —p 51
82 Studies on Paratyphoid Enteritidis Group Reaction in Litmus Milk as Method of Biologic Differentiation C Krumwiede Jr J S Pratt and L A Kohn, New York—p 55
83 *Action of Benzol Deuterophase of Diphasic Leukopenia and Antigen Antibody Reaction H G Weiskotten S C Schwartz and H S Steensland Syracuse N Y—p 63
84 *Id Urinary Phenols with Special Reference to Diphasic Leukopenia R K Brewer and H G Weiskotten, Syracuse N Y —p 71
85 Lipase Studies Regional Lipolytic Activity in Normal Human Brain C Quinan—p 79

86 *Studies on Circulation Effect of Disease on Renal Arterial Bed Capacity of Coronary Arteries as Related to Weight and Age of Heart A A Ghoreyeb Boston —p 87
87 Use of Mallory s Connective Tissue Stain as Indicator of Character of Thyroid Colloid A L Tatum, Philadelphia —p 95
88 *Fluid Enrichment Medium for Isolation of Typhoid Bacilli from Stools O Teague and A W Clurman, Rosebank, N Y —p 107
89 Lipoma Myxomatodes Review of Literature, Report of Case H F Robertson, Minneapolis —p 131
90 *Etiology of Rocky Mountain Spotted Fever Occurrence of Parasite in Tick S B Wolbach, Boston —p 147

78 **Cutaneous Reaction to Tuberculo-Protein**—Krause claims that cutaneous hypersensitiveness to tuberculo protein is inaugurated by the establishment of infection and the development of the initial focus It increases with progressive disease It varies directly with the extent and intensity of the disease It diminishes with the healing of the disease It is probably never entirely lost (except in the presence of intercurrent disease, pregnancy, etc) It is increased by reinfection It is diminished or completely wiped out during the period of the general tuberculin reaction It is suggested by the author that tissue hypersensitiveness may be a function of immunity to reinfection

79 **Anaphylactic State in Its Relation to Resistance to Tuberculous Infection and Tuberculous Disease**—The experiments outlined by Krause were concerned with the influence on resistance of a single, marked anaphylactic intoxication He concludes that anaphylactic shock, experienced by guinea-pigs a short time before infection with tubercle bacilli of low virulence, did not reduce their resistance to such an extent that the parasitism of the particular micro organism concerned was markedly increased, although there were suggestions that the extent of disease was probably increased Krause found that if tuberculous disease of low grade is once established in guinea-pigs a single attack of anaphylaxis does not bring about conditions that favor the extension of the disease and that anaphylactic shock suffered just before the inoculation of a nonpathogenic acid fast organism, the *Mist bacillus,* does not lay the body open to progressive invasion by this germ No success attended the efforts to enhance the virulence of a certain strain of the tubercle bacillus when the method of Thiele and Embleton was followed Evidence is submitted that tubercle bacilli can preserve their viability and their original virulence after being kept in a dried state for from fifteen to seventeen months

80 **General Tuberculin Reaction**—On the basis of Krause's experiments it seems to him reasonable to conclude that any tissue products if thrown rapidly into the circulation in unusual amounts will intoxicate an animal In other words, one's own tissues, whether normal or pathologic, may conceivably poison one if they get into the blood stream in excess Therefore, if the focal reaction following a tuberculin injection, establishes a better circulatory give and take between the tuberculous focus and the animal organism, and, as it were, 'unlocks" or opens' the focus, the resultant symptoms of a general reaction may be due merely to substances that are primarily toxic for the organism The same absorption bringing about symptoms of illness will occur whenever the conditions for focal absorption are enhanced whether it be the more or less continuous absorption from a poorly invested focus or the occasional absorption following physical strain intercurrent disease or drug action, any of which may produce circulatory conditions about the focus that favor increased absorption

83 **Action of Benzol**—In connection with experimental work on the action of benzol rabbits were given two or more daily subcutaneous injections of equal parts of olive oil and benzol It was found that in all cases in which the animals survived the primary fall in the leukocyte curve there followed a primary rise which reached a normal level and in many instances reached the original level This primary rise was always independently of any further injections, followed by a secondary fall, which in turn was followed by a secondary rise to a normal level In the secondary fall the leukocyte curve almost invariably reached a level nearly as low as in the primary fall, and in some instances even lower Further work has given similar results The author s experience indicates that the mortality during the secondary fall is practically as great as during the primary fall In all animals surviving the secondary fall there occurred a return of the leukocyte curve to a normal level, and there was no evidence of any subsequent falls As a descriptive term appropriate for indicating the occurrence of the two periods of leukopenia above described Southard has suggested the term "diphasic leukopenia" The first period the authors designate as the 'protophase', the second as the "deuterophase'

84 **Urinary Phenols with Reference to Diphasic Leukopenia**—The deuterophase of the diphasic leukopenia following subcutaneous injections of equal parts of olive oil and benzol the authors found, is not accompanied by an increase in the phenol content of the urine as is the protophase These results seem to indicate that the deuterophase is not the result of slowness of absorption of the poison" giving rise to "considerable variation' in the amount of poison existing at various times in the circulating blood, and that it is not due to delayed absorption

86 **Studies on Circulation**—In all over 200 hearts were injected by Ghoreyeb In only one of all the casts obtained was an anastomosing vessel found between the right and left coronaries As this vessel was larger in caliber than many of the smaller ramifications appearing in the casts, it was concluded that the failure to obtain more anastomosing vessels was principally due to the fact that very few existed Ghoreyeb concludes from his study that while age causes an increase in the size and weight of the heart, there is no proportionate increase in the capacity of the coronary arteries

88 **Fluid Medium for Isolation of Typhoid Bacilli from Stools**—Teague and Clurman use a Congo-red brilliant green nutrient gelatin, that is 4 c c of 2 per cent Congo red with 0 083 + per cent brilliant green To inhibit the growth of some of those bacteria that are resistant to brilliant green without injuring the typhoid bacilli, bromoform is added About 20 c c of bromoform are added to 100 c c of sterile distilled water The mixture is shaken thoroughly and allowed to stand at room temperature over night. Then some of the saturated solution is pipetted into a sterile flask, care being taken not to disturb the bromoform at the bottom of the bottle or to include any of the globules of bromoform floating on the surface. One c c of the saturated solution is added to 10 c c of the Congo-red brilliant green gelatin immediately before inoculation with the feces Meat infusion is used for the preparation of the nutrient gelatin One-half per cent of dextrose is added to further favor the rapid development of the typhoid bacilli present

90 **Etiology of Rocky Mountain Spotted Fever**—A parasite has been found by Wolbach in proved infected ticks in large numbers, morphologically identical with the parasite found in the lesions of guinea-pigs and monkeys infected with Rocky Mountain spotted fever This parasite does not occur in the tissues of ticks proved to be noninfective Wolbach believes that the distribution of the parasite in the infected ticks indicates that the transmission occurs by way of the salivary gland secretions Transmission by fecal contamination of the wound caused by the tick does not seem possible because of the character of the tick's feces

Journal of Pharmacology and Experimental Therapeutics, Baltimore

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91 Central Action of Curare H McGuigan Chicago —p 471
92 *Spontaneous Liberation of Epinephrin from Suprarenals G N Stewart and J M Rogoff Cleveland —p 479
93 *Influence of Suprarenals on Kidneys E K Marshall Jr and D M Davis Baltimore —p 525
94 Pharmacology of Vas Deferens J A Waddell, Charlottesville Va —p 551

92 **Liberation of Epinephrin from Suprarenals**—The spontaneous liberation of epinephrin was studied by Stewart and Rogoff (in the cat) by means of the (denervated) eye reactions and the blood pressure changes caused by blood from the suprarenals when permitted to pass into the circulation from a pocket of the vena cava in which it has been collected in known amounts and for known periods of time The amount of epinephrin spontaneously liberated in cats was

found to vary in different experiments within a rather narrow range considering the differences in the conditions from 0 0008 to 0 0028 mg per minute per animal, or from 0 0003 to 0 001 mg per minute per kilo of animal After section of both sympathetic trunks in the thorax near the diaphragm, including the major splanchnics, the spontaneous liberation of epinephrin is completely abolished Division of the major splanchnics in the abdomen does not necessarily cause total cessation of the secretion in all cats In one animal a detectable amount was still liberated but the liberation was entirely stopped when all the fibers coming to the semilunar ganglion were cut The fall of blood pressure caused by section of both splanchnics has nothing to do with the failure of the suprarenals to liberate epinephrin For when the nerves of the right gland are alone divided and the left suprarenal vein clipped, the blood collected from the right suprarenal in the cava pocket yields no epinephrin reactions on release of the pocket Although, as is known cats survive indefinitely the removal of one suprarenal and division of the nerve supply of the other, no detectable epinephrin was found in the blood coming from the remaining suprarenal five weeks after the operation Good reactions were obtained on massaging the gland No increase in the epinephrin liberation was detectable when sensory nerves (brachial) were stimulated If any increase was produced by asphyxia in the authors' observations it was very slight

93 **Influence of Suprarenals on Kidneys**—The results of Marshall's and Davis operations confirm in general experience of Elliott and other previous workers on suprarenal problems Their animals have always succumbed after complete operations, with symptoms similar to those described in the literature Cats, from which both suprarenal glands have been completely removed by the interval method and precautions employed by Elliott, have survived from one to seven days The urea concentration in the blood rises after complete removal of the suprarenals to about twice the normal value and remains approximately stationary at this level until shortly before death when it again rises The phenolsulphonephthalein excretion shows a tendency to diminish after suprarenalectomy Cats with both suprarenals removed excrete much less urea and creatinin in the urine after an injection of these substances than normal or singly suprarenalectomized animals The kidneys of suprarenalectomized animals show no noticeable histologic change from the normal but those of suprarenalectomized animals which have received an injection of urea, creatinin and sodium chlorid show a striking change from the control animals The nitrogen excretion in the urine of suprarenalectomized cats is slightly diminished after the operation, the diminution being accounted for by the retention of nitrogen products in the organism There is hence no marked change in protein catabolism These facts the authors regard as indicating a marked lowering of kidney efficiency in suprarenalectomized cats This may occur with a normal blood pressure, and when the animals are in excellent physical condition

Kentucky Medical Journal, Bowling Green

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95 Empyema P F Barbour Louisville—p 478
96 Metastatic Infection of Bone C B Spalding, Louisville—p 480
97 Monstrosities and Congenital Deformities C K Beck, Louisville—p 484
98 Cases of Insanity Selected from Long and Busy Practice J W Crenshaw Cadiz—p 486
99 Crime as Disease, Its Treatment J L Carter, Whitesville p 488
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101 Report of Louisville Vice Commission T H Mulvy, Louisville p 493
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103 Psychologic Study of Deaf Child M A Goldstein, St Louis p 1129
104 Auditory Reeducation T J Harris New York—p 1139
105 Experimental Treatment of Three Congenitally Deaf Children with Sonorous Vibrations L M Hubby New York—p 1152
106 Present Status of Carcinoma with Special Reference to Head and Neck J C Beck Chicago—p 1158
107 Impacted Foreign Body in Trachea C J Imperatori, New York—p 1176
108 Diffuse Diabetic Ulceration of Pharynx and Larynx H Arrowsmith, New York—p 1177

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109 Oxygen and Cancer C R Burr, Portland—p 41
110 Climate of Maine W T Rowe, Rumford—p 52

Medical Record, New York

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112 Present Methods of Excreta Disposal in Rural Schools J A Nydegger Baltimore—p 580
113 Economic Value of Speech Correction I S Wile, New York p 583
114 Treatment of Inoperable Carcinoma by Bipolar Ionization G B Massey, Philadelphia—p 585
115 Three Cases of Acute Anterior Poliomyelitis Treated Successfully by Transfusion of Citrated Normal Blood of Adults G A Rueck New York—p 587
116 Discharging Ear A Bardes, New York—p 588
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118 Device for Drawing Small Amounts of Blood H B Bayles Brooklyn—p 592

New York Medical Journal

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120 Extensive Subdural Hemorrhage After Trauma B Sachs and C A Elsberg, New York—p 633
121 Infantile Paralysis H C Frauenthal New York—p 635
122 Afterthoughts of Epidemic of Infantile Paralysis B Robinson, New York—p 638
123 Pelvic Massage F Herb, Chicago—p 639
124 Inflammation with Regard to Its Stage J F X Jones, Philadelphia—p 640
125 Rectal Operations Under Local Anesthesia J F Saphir New York—p 644
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127 Acute Middle Ear Suppuration J J O Brien, Schenectady—p 649
128 Wake of Wassermann Test J C Minor, Hot Springs Ark—p 651

South Carolina Medical Association Journal, Greenville

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129 Development of Science of Diagnosis L F Barker, Baltimore—p 278
130 Rational Treatment of Cardionephritic Cases N B Heyward Columbia—p 285
131 Home of Uncured and Some of Results of Head Cold C W Kollock Charleston—p 292

Tennessee State Medical Association Journal, Nashville

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132 Routine in Eye Work G C Savage, Nashville—p 189
133 *Solar Treatment in Affections of Bones and Joints W C Campbell, Memphis—p 199
134 *Percy Cautery Treatment of Inoperable Carcinoma of Uterus Report of Cases E T Newell, Chattanooga—p 203
135 Cardioneuroses S T Rucker Memphis—p 208
136 Progress in Treatment of Crippled and Deformed R W Billington, Nashville—p 211
137 Intractable Gonorrhea G R Livermore Memphis—p 215

133 and 134 Abstracted in The Journal, April 22, p 1348

FOREIGN

Titles marked with an asterisk (*) are abstracted below Single *case reports and trials of new drugs are usually omitted*

British Journal of Children's Diseases, London

September XIII No 153

1 *Case of Gastro Enteritis Due to Bacillus Proteus W Boxwell—p 257
2 *Case of Prolonged Hyperpyrexia in Child with Midbrain Tumor C V Turner—p 261
3 Glandular Carcinoma of Uterus in Child Aged Two and One Half Years J F Adams—p 266

1 **Gastro-Enteritis Due to Bacillus Proteus**—The striking features of Boxwell's case were a sudden attack of gastro-enteritis, with sharp hemorrhage from the bowel, high fever and delirium, pain in the muscles and joints, transient paralysis of the limbs, probably of toxic origin, an acute bedsore, long protracted fever of a hectic type with extreme emaciation, the reaction of her blood to a proteus like organism recovered from her feces, and the almost dramatic

improvement and ultimate recovery after the administration of a vaccine made from this organism Boxwell believes that this must have been a genuine case of infection with *Bacillus proteus* because in nearly every important particular the morphology and biology of the organism obtained from the feces corresponded with that of *B proteus*

2 **Case of Prolonged Hyperpyrexia**—The temperature was the most remarkable feature of Turner's case, it was irregular and intermittent throughout, showing great variations at times, once, or sometimes twice, every twenty-four hours it would rise to 105, 106 or 107 F, and then rapidly fall so that in eight or twelve hours it would be normal or subnormal The maximum was per axilla, 109 F and per rectum 111 F Four hours later it was down to 100 F, and in eight hours it was normal The rises occurred most frequently at 11 p m, but this was not constant, the temperature never fell below 97 F The pulse rate varied in proportion with the temperature, it became uncountable when the temperature was high, and only 80 to 100 when the temperature was down, the respiration rate showed corresponding variations During the last week the respirations were grouped, and became Cheyne Stokes in character before death Diarrhea, vomiting and marked wasting were terminal features, for forty-eight hours before death the extremities were icy cold, and the last twenty four hours the temperature was so low as to be unregisterable by an ordinary clinical thermometer Postmortem a solid rounded tumor was found situated in the midline in the region of the corpora quadrigemina

British Medical Journal, London

September 9 II No 2906

4 Educational Number—p 345

Edinburgh Medical Journal

September XVII No 3

5 Hunchback or Gibbus Pelvis (Kyphotic Pelvis Kyphosis Pelvis) D B Hart—p 150
6 Report of Surgical Cases Paget s Disease of Nipple Coccygeal Gland Tumor etc J C Burns—p 161
7 Case of Progressive Subcutaneous Edema D M Greig—p 187

Indian Journal of Medical Research, Calcutta

July IV No 1

8 Sugar of Blood and Sugar in Urine in Varying Conditions of Health in Bengali D McCay—p 1
9 Cultivation of Tubercle Bacillus Directly from Sputum and Post mortem Material M B Soparkar—p 28
10 Fallacies of Certain Modifications of Wassermann Reaction Due to Variation in Complement Content H C Brown and K R K Iyengar—p 41
11 Detection of Origin and Mode of Spread of Epidemic of Diarrhea, Dysentery and Cholera in Poona J Morison and E C R Fox—p 49
12 Genus Ankylostoma in India and Ceylon C Lane—p 74
13 *Genus Dacnitis Dujardin 1845* C Lane—p 93
14 *Kala Azar J W Cornwall—p 105
15 New Anopheline with Unspotted Wings from Mesopotamia (Anopheles Lukisii) S R Christophers—p 120
16 Studies in Flies Study of Specific Differences in Genus Musca Structures Other Than Genitalia P R Awati—p 123
17 Study of Osteomalacia in India A C Scott—p 140
18 Calcium Content of Urine and Blood with Special Reference to Its Variation in Osteomalacia A C Scott—p 169
19 *Experimental Production of Congenital Goiter R McCarrison—p 183
20 Malaria in Muscat C A Gill—p 190

14 **Kala-Azar**—All attempts made by Cornwall to make bugs infected with *Leishmania* transfer the infection by biting, either to a sterile culture medium or to an animal, failed Degenerated forms of *Leishmania* and free flagella are found in the intestine and rectum of *Cimex rotundatus* but no viable resistant cystic forms could be demonstrated in either the rectum or the feces of *Cimex* On the other hand, infected bugs may be devored by some other insect or by a vertebrate and the infection somehow passed on to man If no such bug eater which is capable of transferring the infection can be found some insect host other than the bug must be sought for Resistant forms, which are capable of becoming flagellates when fresh nutriment is supplied to the bug do not remain in the stomach of either the nymphal or adult *Cimex* after the flagellate infection has died out No indications of an intracellular phase of *Leishmania* in the stomach of *Cimex* were met with by Cornwall The fresh serums of man, goat, sheep and guinea-pigs are all inimical to flagellates of *Leishmania*, those of rabbit, dog, hen and cat seem to have little ill effect The inimical action of a serum is destroyed by heating it to 55 C for 30 minutes The parasites of an oriental sore are all intracellular, so *Cimex* can only infect itself when the parasite is in the circulating blood, and not directly by biting the lesion Cornwall points out that this investigation brings into prominence once again two things, first our lack of definite knowledge concerning the bionomics of common insects, such as bugs, and the wide field that exists for close observations of the habits, life history, food supply and natural enemies of the insects and small vertebrates that frequent our houses Second, it is clear that for the elucidation of problems in the insect transmission of disease the close cooperation of a committee consisting of a medical man, an entomologist, and a zoologist is a desideratum

19 **Experimental Production of Congenital Goiter**—Three classes of goats were under McCarrison's observation Class *A*, included twelve female goitrous goats intimately mixing one with another, and to all of whom cultures from the feces of goitrous individuals were administered daily throughout the experiment Class *B*, included eight female goats of the same age, but isolated one from another and receiving no cultures These were further subdivided into four which were muzzled and four which were not muzzled Class *C*, comprised one young female goitrous goat living in the animal houses of the institute within a distance of a few yards from those of class *B* All these were impregnated during the same season by the same male, while in every other respect their conditions of life were identical The only factors then, to which differences of results could be attributable were (1) intimate contact, (2) muzzling, (3) the presence of goiter in the mothers of classes *A* and *C*, and (4) the administration of the cultures With regard to the mothers themselves, it was not observed that the goiters of those in the first and third classes underwent any considerable increase in size during pregnancy Among the mothers in class *B* however, two of the unmuzzled animals developed small goiters during pregnancy With regard to their offspring 100 per cent in the first class were goitrous while 90 per cent were stillborn, macerated, hairless, ill developed and goitrous, death having been intra-uterine

In the second class, on the other hand, none of the offspring showed all these pathologic characteristics at one and the same time Three of the five kids born in this class were perfect in health and development, that is 60 per cent One had a slight goiter which disappeared shortly after birth A fourth was stillborn and goitrous but as it was otherwise well developed, covered with a thick coat of healthy hair and showed no signs of maceration its death was probably extra-uterine The fifth was born prematurely but was not goitrous Its premature birth might well have been due to influences quite outside the scope of the present experiment The kid born of the mother in the third class was perfectly healthy, its thyroid was palpable, but there was no goiter Among the nine control animals therefore six had offspring Of the kids born 66 6 per cent were living and healthy, 33 3 per cent were stillborn, while 33 3 per cent were goitrous at birth In neither of the two kids born with goiter did the enlargement reach the size of the majority of cases in class *A* McCarrison believes therefore, that his previous conclusion is confirmed, namely That congenital goiter is due to the action on the fetal thyroid of toxic substances derived from the maternal intestine These substances are the products of micro-organisms originating in fecally contaminated soil which are conveyed to man and animals by infected food and water

Journal of Tropical Medicine and Hygiene, London

September 1 XIX No 17

21 Cercariae of Natal F G Cawston—p 201
22 Dermatitis Due to Secretion of Beetle in British East Africa P H Ross—p 202

Archives des Maladies du Cœur, etc, Paris

September IX, No 9 pp 377 424

23 *Drug Tests of Bradycardia (Critique de l emploi des epreuves de l'atropine et due nitrite d amyle dans le diagnostic des brady cardies) H Fredericq —p 377
24 *Comparison of Diastolic Pressure in Different Arteries (Du niveau de la pression diastolique mesuree au Pachon dans les differentes arteres des membres) J Heitz —p 382
25 The Low Blood Pressure in the Pregnant (Grossesse et tension arterielle) C Doljan —p 388

23 **Drug Tests of Bradycardia**—Fredericq protests against the generally accepted view that when the heart beat in bradycardia is accelerated by atropin and amyl nitrite the trouble is of nervous origin, while a myocardial origin is assumed when these tests give negative findings, that is, when there is no acceleration Wenckebach seems to be the only one who has raised his voice in protest against this assumption, Fredericq says and he reports the results of some experimental research which sustain this protest A positive result, namely a notable acceleration of the pulse after administration of these drugs proves merely that the physiologic tonus of the vagus nerve is not abolished, not at all that this tonus is unduly exaggerated The rhythm of the beat is determined by a number of factors, and the normal inhibiting action of the vagus plays certainly some part in it But this is not necessarily the factor that determines the bradycardia Whatever the cause of the bradycardia, however, as long as the vagus has its physiologic tonus, its suppression by these drugs will accelerate the abnormally slow rhythm Fredericq induced bradycardia in dogs by moderate compression of the region of the bundle of His, thus inducing a condition similar to the clinical permanently slow pulse from dissociation of the auricle and ventricle action The nerve control of the myocardium was not interfered with Arresting the nerve control with atropin, amyl nitrite or severing the vagus then accelerated the ventricle beat This disproves that a nervous origin is necessary to explain the positive response to these drug tests

24 **Diastolic Pressure in Different Arteries**—Heitz gives a table showing the diastolic pressure at approximately the same time in the humeral and radial arteries and in the femoral and tibial, on each side Surprising differences were found, even in arteries on the same side This renders it necessary in recording cases to mention on which artery the blood pressure was measured and how high up on the artery

Bulletin de l'Académie de Medecine, Paris

September 5 LXXVI, No 35 pp 167 182

26 *Prophylaxis of Tetanus (Au sujet de la prevention du tetanos par le serum antitoxique) Vaillard —p 167
27 Serotherapy in Diphtheria Delearde —p 173
28 Tests of Reserve Power of the Heart (Epreuve d aptitude cardiaque a l effort) C Lian —p 176
29 Carbon Tetrachlorid for Cleansing the Skin Around a Wound (Degraissage de la peripheric des plaies de guerre, par le tetrachlorure de carbone) L Mac Auliffe —p 180

26 **Prophylaxis of Tardy Tetanus**—Vaillard analyzes the various experiences with tetanus developing months after the injury and after preventive inoculation of antiserum It has been proved in this way that the tetanus spores are not destroyed by the usual antiseptics, but only by being incorporated by the leukocytes and digested by them They have been found nonmotile but with apparently unimpaired vitality in leukocytes six months after the injury, in experimental research on dogs and in the clinic A wound infected with tetanus spores may develop tetanus long after it has apparently healed The danger is most imminent when a foreign body infected with the germs is in muscle tissue With dogs under these conditions it proved absolutely impossible to ward off tetanus with antiserum injections, its development was only postponed a little The practical conclusions from his study of the subject are that the primary injection of the antiserum should be proportioned to the severity of the wound The doses should be large, especially when there are foreign bodies in the wound whose removal is not practicable at once In twenty-six of the 105 cases of tardy tetanus of which he has records, the tetanus developed in connection with some secondary operation in the region of the wound incurred from twenty days to six or even ten months before In other cases the tetanus developed after some sequester or foreign body had been mobilized in the tissues or cast off The eliminating process seems to have had the same effect in rousing the slumbering germs as an operative procedure In another group of cases the tetanus came on from one to four months after the wound, which had continued to suppurate In these cases of interminable suppuration, an occasional injection of antiserum might have warded off the disease In a few cases the tetanus developed from forty-nine days to three months after the wound and it had apparently healed and a definite scar had formed Two men in this group had been doing exercises for mechanotherapy and two others had been severely chilled through on some occasion Nothing can be suggested in prophylaxis for such cases, but it is evident that a preventive injection of the antiserum is called for before any secondary operation on the wounded and when there is reason to suspect that a foreign body or sequester is moving about To avoid possible danger of anaphylaxis, the antiserum might be injected by the small preliminary, "refractory dose" method In conclusion he reiterates that the biologic phenomena are too complex for any of our preventive measures to be absolutely infallible in their action

Paris Medical

September 2 VI No 36 pp 181 224

30 *War Psychoses (Psychoses hystero emotives de la guerre) H Claude M Dide and P Lejonne —p 181
31 *Nervous Phenomena from Explosion Nearby (Les accidents nerveux determines par la deflagration des explosifs) G Roussy and J Boisseau —p 185
32 *Rapid Rhythmic Spasms of the Diaphragm (Choree du diaphragme d origine hysterique) Simonin and Chavigny —p 191
33 *Dual Personality Controlling the Gait as a War Psychosis (Troubles de la marche consecutifs aux emotions et commotions de la guerre) M Laignel Lavastine and P Courbon —p 194
34 Secondary Contracture after War Injury of Peripheral Nerves (Hypermyotonie ou contracture secondaire dans les paralysies des nerfs peripheriques par blessure de guerre) A Thomas —p 203
35 *Sequels of War Wounds of the Head (Le syndrome psychique residuel des traumatismes cranio cerebraux de la guerre) M Villaret and M Mignard —p 209
36 Electrodiagnosis in Wartime (Considerations sur l'électrodiagnostic de guerre) Larat —p 215 (Interpretation des discordances entre les reactions electriques et les signes cliniques dans les lesions nerveuses peripheriques) J Chiray G Bourguignon and Dagnan Bouveret —p 220

30 **War Psychoses**—Claude and his coworkers cite some typical cases, explaining the trouble by exclusion as a hysteric neurosis created by emotional stress on a constitutional predisposition and perpetuated by dread of being sent back into danger

31 **Nervous Disturbances from Explosion Nearby**—Roussy and Boisseau report some of their 133 cases of this kind among 1 300 war patients in nine months None had any signs of external injury In the vast majority of the cases the disturbances were of the hysteric type, all curable at once by psychotherapy

32 **Chorea of the Diaphragm**—The extremely rapid rhythmic contraction of the diaphragm in two cases related developed after recurring pleurisy or the chest had been kicked by a horse The clinical picture in the recurring attacks was identical with that described by old writers as "dyspnea and cough from diaphragmatic spasm" or "chorea of the diaphragm " Roentgenoscopy in one case showed that the right and left halves of the diaphragm rose and fell alternately Both cases date from long before the war, although both were in soldiers

33 **Disturbances in the Gait as a War Psychosis**—In this study of the locomotor disturbances in those the writers call the *emotionnes* and the *commotionnes* of the war, one characteristic is manifest through the manifold varieties of such disturbances This characteristic is the ease and promptness with which these disturbances settle into established habits and the difficulty of breaking up these habits It seems as if the locomotor automatism has actually escaped beyond the influence of volition In short, they say, there is a more or less complete dual personality so far as the gait is concerned

35 **Sequels of Wounds of the Head**—Villaret and Mignard have kept under surveillance to date the 350 cases of brain wounds which have passed through their neurologic service at a base hospital In no instance has the destruction of brain tissue been followed by any characteristic form of insanity or the syndrome of true dementia, idiocy or imbecility To date, the only sequels seem to be a syndrome of sluggish psychic action and early fatigue from mental effort, while the intellect, emotions and will can be evoked at any time There may be occasional brief periods of confusion, suggesting the psychic equivalents of epilepsy The location of the wound does not seem to have any influence on this residual psychic syndrome

Presse Médicale, Paris

September 7 XXIV No 49 pp 389 396

37 General Principles for Making Artificial Legs (Quelques principes pour la prothese du membre inferieur) A Broca —p 389
38 Alkaline Chalybeate Mineral Water in Treatment of Hard Edema (Guerison des oedemes durs traumatiques et phlebitiques par les injections sous cutanees d eau du Breuil) Denis —p 390
39 Colloidal Metals in Treatment of Typhus and Relapsing Fever when Serotherapy is Not Available (Traitement du typhus exanthematique et du typhus recurrent par l or et l argent a l etat colloidal) J Bouygues —p 391
40 *Prophylaxis of Tardy Tetanus by Reinjection of Antiserum* (La prevention du tetanos par le serum antitoxique) Vaillard —p 393 See abstract 26 above

September 11 No 50 pp 397 404

41 *Periodic Vomiting with Acetonemia Not a Form of Appendicitis A B Marfan —p 397
42 *Cartilage to Close Gap in Skull (Technique operatoire de la cranioplastie cartilagineuse) Villandre —p 399
43 Sandals to Wear Over Shoes to Correct Varus (Les patins correcteurs contrevarus et contre equin) L Lortat Jacob and P Meunier —p 400

41 **Periodic Vomiting with Acetonemia**—Marfan says that he has never known a case of this kind developing for the first time after the age of 10 The first attack may occur during the first months of life or at any time between this and 10, and they never return after puberty We must assume that some abrupt disturbance in the nutritional interchanges sets at liberty some substance that has an emetic action, causing the vomiting while at the same time the fats are split and an excess of fat acid is thrown into the circulation overtaxing the liver and permitting the passage of acetone into the blood The disturbance in the nutritional interchanges resembles in many respects that from chloroform poisoning It occurs almost exclusively in children with an inherited neuro-arthritic taint and is favored by a diet rich in fats The theory that the appendix is a factor is disproved by twenty-one cases which he reports in detail, all in children who had had the appendix removed In some cases the attacks had long preceded and continued after the appendicectomy In others they developed for the first time a few months to a year afterward In some cases it may be difficult to differentiate the periodic vomiting from acute appendicitis, but with the latter the temperature is abnormally high and the acetonemia is slight, inconstant and tardy as it results merely from the lack of food and the abdomen is distended and tender at certain points Appendicitis also is rare in children under 5 Sometimes palpation through the rectum may clear up the diagnosis In case of doubt it is wiser to act as if appendicitis were certain, as in several of the cases reported the two affections coexisted

42 **Cartilage Implant to Close Gap in Skull**—Villandre describes with illustrations how he shovels out scraps of cartilage from the sixth or seventh costal cartilage using a bistoury with bayonet handle The gap is filled with from two to five of these scraps, and they are held in place by catgut passed back and forth through the edges of the periosteum of the skull and inner layer of the scalp, thus forming a grating over the scraps in the gap

Progrès Médical, Paris

August 20 XXXI No 16 pp 137 144

44 *Prophylaxis of Gas Gangrene (Etude histologique sur un cas de gangrene gazeuse au debut Considerations therapeutiques) M Senechal —p 137
45 Narrow Steel Arches and Supports to Bridge Opening in Plaster Casts (La transformation de nos appareils platres en chirurgie de guerre) P Barbarin —p 140

September 5 No 17, pp 145 162

46 *Reeducation of Functional Deafmutism (L'audimutite rebelle d origine emotionnelle) M Briand and J Philippe —p 145
47 *Uremic Origin of Nervous Complications in Typhoid (Fièvre typhoide ataxoadynamique et uremie cerebrale) G Jouve Balmelle —p 149
48 Injury of the Eyes from Gases (Lesions oculaires consecutives à l action des gaz lacrymogenes) P Gremeaux —p 157
49 Jointed Litter for the Trenches (Brancard a bras articules pour le transport des blesses dans les tranchees) G Lefrou —p 159
50 Cardboard Temporary Prothesis for the Leg (Le pilon provisoir a l hopital danois) E A Tscherning —p 160

44 **Incipient Gas Gangrene**—Senechal reproduces seven microscopic fields taken from a case in which gas gangrene developed under his eyes The focus of the inoculation is in the interfascicular cellular tissue of the muscle Hence cleaning out with the bistoury the injured muscle tissues inoculated with the germ wards off gas gangrene Even if it does develop this early mechanical clearing out of the wound improves the general condition so that amputation gives better chances for survival

46 **Reeducation of Emotional Deafmutism**—Briand and Philippe report a case in detail to show the various steps in the reeducation of men who had lost the power of speech under emotional stress They begin with rhythmic exercises in breathing then in blowing out the light of a match, or a candle then in blowing soap bubbles The next step is to whistle first one note, leading up slowly to whistling some very simple familiar tune Then the vowels in turn expatiating amply on the progress realized, but leaving actual speech to be casually rearoused spontaneously In short, they emphasize, treatment must be insidious rather than with force

47 **Uremic Complications in Typhoid**—Balmelle reviews his eighteen months of experience in the typhoid ward of the Marseilles military hospital Among the 600 typhoid patients 14 per cent had been supposedly effectually vaccinated and the typhoid averaged no milder in these than in the 86 per cent who had not been vaccinated Study of the blood showed an unusually high urea content in all the patients with extreme prostration delirium and other nervous manifestations All the patients with only slight and transient rise of the urea content of the blood soon threw off their nervous symptoms or they did not develop any A number of curves are given to illustrate the importance of this uremia as the cause of the nervous complications in typhoid He found also in two pneumonia patients 1 11 gm urea to the liter of blood in one case and 1 48 in the other

When he recognized this uremia in his typhoid patients measures to combat it were at once instituted and prompt improvement followed Before this, the mortality had been 23 per cent among the 106 patients with typhoid of this 'ataxo-adynamic type' as he calls it When his assumption of uremia as the causal factor was confirmed by the laboratory, and treatment based thereon applied, the mortality since has been only 12 per cent among seventy-four patients of this group, presenting that is from 0 6 to 4 6 gm urea to the liter of blood The uremia is evidently secondary to injury of the kidneys from the typhoid toxin He applied the classic treatment for uremia water internally and repeated venesection, as the urea content of the blood declined, the nervous phenomena improved to correspond Sluggish pupil reactions and myosis may prove a warning sign He noticed further that the uremia sometimes displayed a tendency to lower the temperature The slow regular decline might mislead one to assume improvement if it were not for the coincident aggravation of all the other symptoms

Gazzetta degli Ospedali e delle Cliniche, Milan

September 3 XXXVII No 71 pp 1105 1120

51 *Lumbar Puncture of the Fetus During Podalic Extraction as Aid to Safe Delivery (Puntura lombare nel feto, durante l'estrazione podalica nell interesse della vita del feto stesso) R Costa —p 1109
52 Compulsory Insurance Against Sickness (Le assicurazioni obbligatorie contro le malattie) E Villa —p 1119

Archives des Maladies du Cœur, etc, Paris

September IX No 9 pp 377 424

23 *Drug Tests of Bradycardia (Critique de l'emploi des epreuves de l'atropine et du nitrite d'amyle dans le diagnostic des bradycardies) H Fredericq —p 377
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28 Tests of Reserve Power of the Heart (Epreuve d aptitude cardiaque a l effort) C Lian —p 176
29 Carbon Tetrachlorid for Cleansing the Skin Around a Wound (Degraissage de la peripherie des plaies de guerre par le tetrachlorure de carbone) L Mac Auliffe —p 180

26 **Prophylaxis of Tardy Tetanus**—Vaillard analyzes the various experiences with tetanus developing months after the injury and after preventive inoculation of antiserum It has been proved in this way that the tetanus spores are not destroyed by the usual antiseptics but only by being incorporated by the leukocytes and digested by them They have been found nonmotile but with apparently unimpaired vitality in leukocytes six months after the injury, in experimental research on dogs and in the clinic A wound infected with tetanus spores may develop tetanus long after it has apparently healed The danger is most imminent when a foreign body infected with the germs is in muscle tissue With dogs under these conditions it proved absolutely impossible to ward off tetanus with antiserum injections, its development was only postponed a little The practical conclusions from his study of the subject are that the primary injection of the antiserum should be proportioned to the severity of the wound The doses should be large, especially when there are foreign bodies in the wound whose removal is not practicable at once In twenty-six of the 105 cases of tardy tetanus of which he has records, the tetanus developed in connection with some secondary operation in the region of the wound incurred from twenty days to six or even ten months before In other cases the tetanus developed after some sequester or foreign body had been mobilized in the tissues or cast off The eliminating process seems to have had the same effect in rousing the slumbering germs as an operative procedure In another group of cases the tetanus came on from one to four months after the wound which had continued to suppurate In these cases of interminable suppuration, an occasional injection of antiserum might have warded off the disease In a few cases the tetanus developed from forty-nine days to three months after the wound and it had apparently healed and a definite scar had formed Two men in this group had been doing exercises for mechanotherapy and two others had been severely chilled through on some occasion Nothing can be suggested in prophylaxis for such cases, but it is evident that a preventive injection of the antiserum is called for before any secondary operation on the wounded and when there is reason to suspect that a foreign body or sequester is moving about To avoid possible danger of anaphylaxis the antiserum might be injected by the small preliminary, "refractory dose' method In conclusion he reiterates that the biologic phenomena are too complex for any of our preventive measures to be absolutely infallible in their action

Paris Médical

September 2 VI No 36 pp 181 224

30 *War Psychoses (Psychoses hystero emotives de la guerre) H Claude M Dide and P Lejonne —p 181
31 *Nervous Phenomena from Explosion Nearby (Les accidents nerveux determines par la deflagration des explosifs) G Roussy and J Boisseau —p 185
32 *Rapid Rhythmic Spasms of the Diaphragm (Choree du diaphragme d'origine hysterique) Simonin and Chavigny —p 191
33 *Dual Personality Controlling the Gait as a War Psychosi (Troubles de la marche consecutifs aux emotions et commotions de la guerre) M Laignel Lavastine and P Courbon —p 194
34 Secondary Contracture after War Injury of Peripheral Nerves (Hypermyotonie ou contracture secondaire dans les paral s e des nerfs peripheriques par blessure de guerre) A Thomas —p 203
35 *Sequels of War Wounds of the Head (Le syndrome psychique residuel des traumatismes cranio cerebraux de la guerre) M Villaret and M Mignard —p 209
36 Electrodiagnosis in Wartime (Considerations sur l electrodiagnostic de guerre) Larat —p 215 (Interpretation des discordances entre les reactions electriques et les signes cliniques dans les lesions nerveuses peripheriques) J Chiray G Bourguignon and Dagnan Bouveret —p 220

30 **War Psychoses**—Claude and his coworkers cite some typical cases explaining the trouble by exclusion as a hysteric neurosis created by emotional stress on a constitutional predisposition and perpetuated by dread of being sent back into danger

31 **Nervous Disturbances from Explosion Nearby**—Roussy and Boisseau report some of their 133 cases of this kind among 1,300 war patients in nine months None had any signs of external injury In the vast majority of the cases the disturbances were of the hysteric type, all curable at once by psychotherapy

32 **Chorea of the Diaphragm**—The extremely rapid rhythmic contraction of the diaphragm in two cases related, developed after recurring pleurisy or the chest had been kicked by a horse The clinical picture in the recurring attacks was identical with that described by old writers as 'dyspnea and cough from diaphragmatic spasm" or "chorea of the diaphragm" Roentgenoscopy in one case showed that the right and left halves of the diaphragm rose and fell alternately Both cases date from long before the war although both were in soldiers

33 **Disturbances in the Gait as a War Psychosis**—In this study of the locomotor disturbances in those the writers call the *emotionnes* and the *commotionnes* of the war, one characteristic is manifest through the manifold varieties of such disturbances This characteristic is the ease and promptness with which these disturbances settle into established habits and the difficulty of breaking up these habits It seems as if the locomotor automatism has actually escaped beyond the influence of volition In short, they say, there is a more or less complete dual personality so far as the gait is concerned

35 **Sequels of Wounds of the Head**—Villaret and Mignard have kept under surveillance to date the 350 cases of brain wounds which have passed through their neurologic service at a base hospital In no instance has the destruction of brain tissue been followed by any characteristic form of insanity or the syndrome of true dementia, idiocy or imbecility To date, the only sequels seem to be a syndrome of sluggish psychic action and early fatigue from mental effort, while the intellect, emotions and will can be evoked at any time There may be occasional brief periods of confusion suggesting the psychic equivalents of epilepsy The location of the wound does not seem to have any influence on this residual psychic syndrome

Presse Médicale, Paris

September 7 XXIV No 49 pp 389 396

37 General Principles for Making Artificial Legs (Quelques principes pour la prothese du membre inferieur) A Broca—p 389
38 Alkaline Chalybeate Mineral Water in Treatment of Hard Edema (Guerison des oedemes durs traumatiques et phlebitiques par les injections sous cutanees d eau du Breuil) Denis—p 390
39 Colloidal Metals in Treatment of Typhus and Relapsing Fever when Serotherapy is Not Available (Traitement du typhus exanthematique et du typhus recurrent par l or et l argent a l'etat colloidal) J Bouygues—p 391
40 Prophylaxis of Tardy Tetanus by Reinjection of Antiserum (La prevention du tetanos par le serum antitoxique) Vaillard—p 393 See abstract 26 above

September 11 No 50 pp 397 404

41 *Periodic Vomiting with Acetonemia Not a Form of Appendicitis A B Marfan—p 397
42 *Cartilage to Close Gap in Skull (Technique operatoire de la cranioplastie cartilagineuse) Villandre—p 399
43 Sandals to Wear Over Shoes to Correct Varus (Les patins correcteurs contrevarus et contre equin) L Lortat Jacob and P Meunier—p 400

41 **Periodic Vomiting with Acetonemia**—Marfan says that he has never known a case of this kind developing for the first time after the age of 10 The first attack may occur during the first months of life or at any time between this and 10, and they never return after puberty We must assume that some abrupt disturbance in the nutritional interchanges sets at liberty some substance that has an emetic action, causing the vomiting while at the same time the fats are split and an excess of fat acid is thrown into the circulation, overtaxing the liver and permitting the passage of acetone into the blood The disturbance in the nutritional interchanges resembles in many respects that from chloroform poisoning It occurs almost exclusively in children with an inherited neuro-arthritic taint, and is favored by a diet rich in fats The theory that the appendix is a factor is disproved by twenty-one cases which he reports in detail, all in children who had had the appendix removed In some cases the attacks had long preceded and continued after the appendicectomy In others they developed for the first time a few months to a year afterward In some cases it may be difficult to differentiate the periodic vomiting from acute appendicitis, but with the latter the temperature is abnormally high and the acetonemia is slight inconstant and tardy as it results merely from the lack of food, and the abdomen is distended and tender at certain points Appendicitis also is rare in children under 5 Sometimes palpation through the rectum may clear up the diagnosis In case of doubt it is wiser to act as if appendicitis were certain, as in several of the cases reported the two affections coexisted

42 **Cartilage Implant to Close Gap in Skull**—Villandre describes with illustrations how he shovels out scraps of cartilage from the sixth, or seventh costal cartilage, using a bistoury with bayonet handle The gap is filled with from two to five of these scraps and they are held in place by catgut passed back and forth through the edges of the periosteum of the skull and inner layer of the scalp, thus forming a grating over the scraps in the gap

Progrès Medical, Paris

August 20 XXXI No 16 pp 137 144

44 *Prophylaxis of Gas Gangrene (Etude histologique sur un cas de gangrene gazeuse au debut Considerations therapeutiques) M Senechal—p 137
45 Narrow Steel Arches and Supports to Bridge Opening in Plaster Casts (La transformation de nos appareils platres en chirurgie de guerre) P Barbarin—p 140

September 5 No 17 pp 145 162

46 *Reeducation of Functional Deafmutism (L'audi mutite rebelle, d origine emotionnelle) M Briand and J Philippe—p 145
47 *Uremic Origin of Nervous Complications in Typhoid (Fièvre typhoide ataxoadynamique et uremie cerebrale) G Jouve Balmelle—p 149
48 Injury of the Eyes from Gases (Lesions oculaires consecutives a l'action des gaz lacrymogenes) P Gremeaux—p 157
49 Jointed Litter for the Trenches (Brancard a bras articules pour le transport des blesses dans les tranchees) G Lefrou—p 159
50 Cardboard Temporary Prothesis for the Leg (Le pilon provisoir a l'hopital danois) E A Tscherning—p 160

44 **Incipient Gas Gangrene**—Senechal reproduces seven microscopic fields taken from a case in which gas gangrene developed under his eyes The focus of the inoculation is in the interfascicular cellular tissue of the muscle Hence cleaning out with the bistoury the injured muscle tissues inoculated with the germ wards off gas gangrene Even if it does develop this early mechanical clearing out of the wound improves the general condition so that amputation gives better chances for survival

46 **Reeducation of Emotional Deafmutism**—Briand and Philippe report a case in detail to show the various steps in the reeducation of men who had lost the power of speech under emotional stress They begin with rhythmic exercises in breathing, then in blowing out the light of a match, or a candle then in blowing soap bubbles The next step is to whistle first one note leading up slowly to whistling some very simple familiar tune Then the vowels in turn, expatiating amply on the progress realized, but leaving actual speech to be casually rearoused spontaneously In short, they emphasize, treatment must be insidious rather than with force

47 **Uremic Complications in Typhoid**—Balmelle reviews his eighteen months of experience in the typhoid ward of the Marseilles military hospital Among the 600 typhoid patients 14 per cent had been supposedly effectually vaccinated and the typhoid averaged no milder in these than in the 86 per cent who had not been vaccinated Study of the blood showed an unusually high urea content in all the patients with extreme prostration, delirium and other nervous manifestations All the patients with only slight and transient rise of the urea content of the blood soon threw off their nervous symptoms or they did not develop any A number of curves are given to illustrate the importance of this uremia as the cause of the nervous complications in typhoid He found also in two pneumonia patients 1 11 gm urea to the liter of blood in one case and 1 48 in the other

When he recognized this uremia in his typhoid patients measures to combat it were at once instituted and prompt improvement followed Before this, the mortality had been 23 per cent among the 106 patients with typhoid of this "ataxo-adynamic type" as he calls it When his assumption of uremia as the causal factor was confirmed by the laboratory and treatment based thereon applied, the mortality since has been only 12 per cent among seventy-four patients of this group, presenting that is from 0 6 to 4 6 gm urea to the liter of blood The uremia is evidently secondary to injury of the kidneys from the typhoid toxin He applied the classic treatment for uremia, water internally and repeated venesection, as the urea content of the blood declined, the nervous phenomena improved to correspond Sluggish pupil reactions and myosis may prove a warning sign He noticed further that the uremia sometimes displayed a tendency to lower the temperature The slow regular decline might mislead one to assume improvement if it were not for the coincident aggravation of all the other symptoms

Gazzetta degli Ospedali e delle Cliniche, Milan

September 3 XXXVII No 71 pp 1105 1120

51 *Lumbar Puncture of the Fetus During Podalic Extraction as Aid to Safe Delivery (Puntura lombare nel feto, durante l'estrazione podalica nell interesse della vita del feto stesso) R Costa—p 1109
52 Compulsory Insurance Against Sickness (Le assicurazioni obbligatorie contro le malattie) E Villa—p 1119

51 **Lumbar Puncture of Fetus to Facilitate Delivery**—Costa had long debated the possibility of relieving by lumbar puncture the pressure in the skull during feet-first delivery with contracted pelvis He hoped with this to ward off intracranial hemorrhage with difficult delivery In a recent case, a woman at term with conjugate of only 7 4 cm in a totally contracted pelvis was being prepared for cesarean section when, to the surprise of all, the head presented and the child was delivered spontaneously and almost without effort The explanation was found in spina bifida in the lumbar region, a myelomeningocele, through which cerebrospinal fluid had been squeezed out during the compression of the head as it emerged The diameters of the child's head had been reduced from 8 8 to 7 4 cm and 9 2 to 7 4 cm, the diameter at the base of the skull being 7 5 cm The child showed no signs of asphyxia or symptoms from pressure on the brain but died before the end of the week from the constant oozing of the fluid No signs of intracranial hemorrhage or fracture could be discovered at necropsy

After considerable experimental work on infant cadavers, showing the feasibility of lumbar puncture, he applied it in a case of podalic extraction with central placenta praevia After combined version he slowly dragged the feet down until the anus presented and the tip of the spine could be forced into view Lumbar puncture was then done, the softness and thinness of the tissues rendering it remarkably easy No cerebrospinal fluid could be aspirated only 0 25 c c of a reddish fluid escaped, but as the head entered the inlet, the fluid gushed from the needle hole, but it stopped at once as soon as the head emerged The mother and child left the maternity a week later in the best condition The os was unusually rigid in this case, and Costa is convinced that the lumbar puncture warded off serious complications for the infant In his experiments on infant cadavers he found that the diameter of the head could easily be reduced by 0 5 cm by lumbar puncture He does not wait for further experience before calling attention to its possible advantages in certain rare cases

Policlinico, Rome

September 3 XXIII No 36 pp 1067 1094

53 Specific Precipitin Reaction in the Cerebrospinal Fluid in Meningitis G Sampietro —p 1067
54 Experiences at Rome Hospital for the Wounded (I feriti curati nell ospedale di riserva al Policlinico nel reparto del prof A Alessandri dall agosto 1915 all aprile 1916) V Grossi —p 1076 To be continued

Grèce Médicale, Athens

XVIII No 5 6 pp 9 12

55 *Radiotherapy of Inoperable Cancer of the Breast Chilaiditi —p 9
56 Fatal Hemorrhage from Eroded Artery in Duodenal Ulcer Missirloglou —p 10

55 **Radiotherapy of Mammary Cancer**—In Chilaiditi s case the cancer had developed rapidly in the sixth month of a pregnancy The tumor had infiltrated the breast, which was hard, as also the enlarged lymph glands in the axilla and supraclavicular and subclavicular regions, with other small nodules in the skin, and there was great emaciation The findings in the mediastinum were also suspicious The tumor retrogressed completely under intensive cross-fire exposure to the Roentgen rays Three series of treatments were given, the last following after the birth of the healthy child During the five months since the beginning of treatment there has been no sign of recurrence, all traces of the tumor had definitely subsided by the fourth week after the second series of exposures To obtain the total dose of 600 H after filtering through 4 mm aluminum plus 5 mm leather, the production of 4,000 H was necessary

Semana Medica, Buenos Aires

XXIII No 24 pp 653 676

57 Present Status of Carcinoma of the Esophagus C P Mayer —p 653

No 28 pp 25 52

58 *Foreign Body in the Ear of a Child (Contribucion al estudio de los cuerpos extraños del oido en el nino) A S Lagomarsino —p 32
59 *The Blood Picture in Parturients (Hematologia en obstetricia) T A Chamorro —p 33

No 29 pp 53 80

60 *Deratization with Small Portable Apparatus (El nuevo aparato raticida tipo Parque Sanitario ') F [illegible] —p 53
61 **Hematology of Twenty One Multiparae at Term (Hematologia en obstetricia) T A Chamorro —p 57*

58 **Foreign Body in the Ear of a Child**—Lagomarsino cites some cases on record in which a bead or even a sharp edged foreign body had remained in the ear for years without appreciable injury His extensive experience has confirmed anew and repeatedly that the injury from a foreign body is almost invariably due to hasty and ill advised attempts to extract it, before the physician sees the case

59 See abstract 61

60 **Gas Rat-Killing Apparatus**—An illustrated description is given of the small apparatus that has been devised by Penna, chief of the public health service, to kill rats in their holes It looks like a syringe, a cartridge containing the mixture that produces the gases fitting into the syringe-like body almost like a piston, while the long tip of the syringe is run far down into the hole The earth is stamped down around it and wherever any smoke can be seen escaping the earth is stamped down to hold in the gases A handle parallel to the body of the apparatus permits it to be handled when hot The mixture found most powerfully asphyxiating is made of 38 52 gm potassium nitrate (KNO_3), 6 67 gm vegetable charcoal, 8 10 gm sulphur, 17 98 gm white arsenic, and 8 73 gm tar (*alquitran*) The whole forms 80 gm of a mixture which, as it burns, generates the gas $SO + As\,O_3 + CO$ The health service has 200 of these little apparatus ready, with 75,000 of the cartridges One is usually enough but several may be required for long, winding holes Rats in cages die when the jet of escaping gas is turned on them even in the open air

61 **The Blood Picture in the Pregnant and in Parturients**—Chamorro relates that in his study of 106 specimens of blood from nearly this number of pregnant or parturient women, the red blood corpuscles showed little change from ordinary conditions The leukocytes showed the most change, both in numbers and quality The numbers were above normal during pregnancy in general, and grew still higher during delivery, slowly returning to normal afterward The increase is mostly in the polynuclears This leukocytosis may persist for three weeks after delivery, and may be regarded as a favorable sign It is more pronounced in primiparae, the polynucleosis in multiparae Protracted delivery with much pain leads to disappearance of the eosinophils His report has been published serially, with tabulated details

Russkiy Vrach, Petrograd

XV No 28 pp 649 672

62 Influence of Asphyxiating Gas Phosgen, on Animal Organism (O vlianii phosgena na organizm zhivotnikh) B I Slovtzoff —p 649
63 Leukocyte Picture in Guinea Pigs only Slightly and Briefly Modified by Removal of Thymus (Beztsvietnia krovyania tieltsa pri udalenii vilochkovoi zhelezi) A E Selinoff —p 652
64 *Dietetic Treatment of Gastric Hyperacidity P I D Sushtshevskaia —p 656 Concluded in No 29 —p 679
65 Enucleation of the Eyeball with Transplantation of Fat and Muscle Tissue Two Cases (Udalenie glaznogo yabloka s peresadkoi zhira i glaznikh muishts) V N Preobrazhenski —p 660

64 **Dietetic Treatment of Chronic Gastric Hyperacidity**—The other half of this article was reviewed in these columns on page 1122 The extremely encouraging results obtained by simple dietetic restrictions are described in detail Four men from 27 to 62 years old and two women of 24 and 48 had long suffered from severe pains an hour or two after eating, with other disturbances from hyperacidity A gradual clinical cure was realized by allowing them exclusively whites of eggs and butter In a typical case in a man of 30 the Ewald test breakfast showed total acidity of 75 and free hydrochloric acid 45 at the commencement of the course One white of egg in the morning and 20 gm butter in the evening were all that was allowed at first The amounts were increased until by the eighth day he was getting eight

whites in the morning and 160 gm butter in the evening, and these amounts were continued for four days At the twelfth day, the test breakfast showed only 40 and 16 for the acidity figures Four whites and 50 gm butter were then made the daily ration, supplemented by 500 gm potatoes in fluid form and the patient regained what he had lost in weight The potato soup was then given twice a day, and the patient was discharged from treatment the twentieth day materially benefited The charts of each case are given, showing the improvement from thus resting the stomach, making as little demands on it as possible, and soothing it The acidity ran up again when anything else, even skimmed milk, was allowed until the secretory function had been permanently stabilized

The writer quotes Boas' statement that no authentic case is on record in which hyperacidity was permanently reduced by dieting alone, and says he is mistaken In Meyer's negative research in this line, milk was given But milk has a decided tendency to increase the acidity, and hence his tests are not conclusive On the diet reported here, whites of eggs and cream butter, all without salt and without water, given separately, morning and evening the subjective improvement was remarkable, the relief from pain and the absence of complaints of thirst The output of urine was much reduced on this diet, and the patients lost some in weight and did not feel quite so strong as usual, but when they changed to the carbohydrate-fat diet they soon regained what they had lost and surpassed their former weight One patient, after the secreting function had been stabilized, while still on the carbohydrate-fat diet was tested with an acid-stimulating meal, two glasses of milk nearly a pound of white bread and a cutlet, but no disturbances followed suggesting hyperacidity

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

September 2 II, No 10 pp 805 900

66 *Medical Education IV (Nadere beschouwingen over de beteekenis en inrichting van het praeclinische onderwijs Het wetenschappelijk peil van de colleges en het nut der practica) G van Rijnberk—p 805
67 Practical Importance for Delivery of the Connection Between the Amnion and the Chorion (De verbinding tusschen het amnion en het chorion en haar praktische beteekenis bij de baring) G C Nijhoff—p 808
68 Study of the Spinal Nerve Segmental Zones in the Cat (De bouw en overdekking der rompdermatomen bij de kat) S de Boer—p 817
69 Fibrin as an Element in Coagulation of Blood (Nog eens over fibrine en het wezen der bloedstolling) L Hekma—p 831
70 *Treatment of Epidemic Cerebrospinal Meningitis C J H T Plat—p 848
71 Treatment of Inflammatory Processes in the Orbit (Aanwijzingen voor de behandeling der oogkasontsteking) F H Quix—p 854
72 Endonasal Treatment of Frontal Sinusitis (Endonasale behandeling bij aandoeningen der voorhoofdsholten) A de Kleyn—p 855
73 Paroxysmal Hemoglobinuria, Two Cases J Lankhout—p 856

66 **Medical Education**—Van Rijnberk is professor of physiology at the University of Amsterdam and in this, his fourth discussion of this subject, he comments on the views of Lyon and of Barker on medical education, as published in THE JOURNAL, Feb 26, 1916, pp 629 and 631 He has been translating them for the readers of the *Tijdschrift*, of which he is editor, and remarks that it delights him beyond measure to find that his own ideas—which seemed too utopian to be ever realized—are being advanced and even surpassed by instructors in America, 'that land of the utilitarian and the practical' He says "My predecessor used to say that he adapted his instruction so that the stupidest member of the class could follow it, knowing that the best could always get something out of it But I think this is the wrong principle The teaching should be adapted to the best minds in the class This stimulates them all to strive for the highest and best" " In physiology, especially, it is impossible to draw a dividing line between the theoretical and the practical Knowledge of the behavior of the frog heart is of the utmost importance for the future physician, although he knows that the frog is a cold-blooded animal and that conditions are by no means the same in the frog and in man, also the reflexes in the cat's tail, although this knowledge cannot be applied directly to the tail-less *genus homo* The best way to teach a science is to teach it as if one were *specializing in this branch of science alone*, and not be deterred by any dissatisfaction on the part of the pupils as to whether they can ever utilize later what they are studying But for this the teacher must give only the general outlines, the fundamentals, omitting the finer details unless necessary to elucidate some point

"Above all," he continues, "the practical courses should train in dexterity in the use of the hands It should be demanded first and foremost of a physician that he should be handy During the preclinical courses in particular he should be given opportunities to train his fingers in fine work And nothing calls for better work in this line than making a preparation of a nerve with its ramifications, or a histologic preparation a chemical analysis or a physiologic experiment Such exercises serve another purpose also in that they show where the student has got an incomplete or incorrect grasp of a subject" Is it not deplorable,' he adds 'that it is possible for a medical student to obtain his degree without ever having put through himself, a series of simple fundamental experiments and observations in any branch of the science?' "Another argument in favor of the scientific in medical teaching is that it affords the opportunity to wake a slumbering love of science and stimulate the student to develop this unsuspected latent talent, and fit himself to be the leader and teacher of the morrow, carrying forward the torch of science when it would drop from others' hands In short ' he emphasizes 'we must constantly bear in mind that first-class professors and scientific training mean first-class professors and first-class physicians in the future '

70 **Epidemic Cerebrospinal Meningitis**—Plat states that although this disease is extremely rare in the Netherlands, yet last year he had twenty-five cases in his service at 's-Gravenhage mostly in soldiers The disease was of a very severe type but the mortality for the total number was 50 per cent He emphasizes that the outcome depends on getting the antiserum into the meninges in time, and he had the physician summoned by telephone the moment any one was brought in with symptoms suggesting meningitis The physician hastened to the bedside at once, day or night and lumbar puncture was done without a moment's delay If the fluid looked suspicious or the clinical symptoms were decisive, the antiserum was injected at once If not, he waited for bacteriologic findings from the fluid When the fluid was under very low pressure—only one drop at a time escaping at four or five seconds' interval—it often took an hour or longer to withdraw the desired amount, but the benefit always justified the waiting, the idea of hastening the escape of fluid by aspiration he regards as too dangerous to consider for a moment

Hospitalstidende, Copenhagen

August 30 LIX No 35 pp 845 868

74 *Embolic or Thrombotic Obstruction of Mesenteric Vessels Four Cases (4 Tilfælde af Tarminfarkt) A Berntsen—p 845

September 6 No 36 pp 869 892

75 *Prurigo Nodularis Two Cases N Nander—p 869

74 **Infarction of the Intestines**—Berntsen compares the necropsy findings with the clinical course in cases of obstruction of a mesenteric artery or mesenteric vein in four men from 24 to 72 years old In one case there had been contusion of the abdomen three weeks before In another there was a history of abdominal pains at times for years and recent pulmonary trouble Only the microscope revealed phlebitis and thrombosis in the small mesenteric veins In the younger man the thrombosis was secondary to incarcerated inguinal hernia which had been reducible for fifteen years The prognosis is bad, but operative treatment is always indicated The onset of trouble may resemble that of ileus With embolism it is sudden and stormy, with thrombosis more insidious Bloody diarrhea is almost the only differentiating symptom, this may occur with invagination, but the latter is encountered almost exclusively in children There is bloody diarrhea in only a small proportion of cases of intestinal infarction

75 **Nodular Prurigo**—The two patients whose cases are described were working men of 24 and 41 The affection began in the younger man seven months before, with intense itching on the feet and hands, and later of other parts of the body except the trunk As he scratched the itching regions, bunches developed in the skin, and the slightest touch starts the nodules and bunches to itching The young man seems to be normal otherwise except for the lymphangitis and ulcerating nodules that have been scratched and infected The microscopic diagnosis of an excised tumor confirmed the assumption of a neurodermatitis This also proved to be the trouble in the second case This man of 41 had been under treatment for exophthalmic goiter about a year after the skin affection developed In both cases the nodules retrogressed under salicylated salves and other local measures, and prevention of scratching, with bromid and valerian internally Nander knows of only thirty-two similar cases on record A nervous predisposition was manifest in most cases, but warm weather seems to attenuate the tendency to the affection

Hygiea, Stockholm

LXXVIII No 16 pp 1185 1278

76 *Fate of Patients with Cancers Deemed Inoperable (En efterundersokning av på Serafimerlasarettets kirurgiska avdelning under aren 1907 1914 vardade fall av cancer ventriculi inoperabilis') A Troell—p 1185
77 *Parinaud s Conjunctivitis (Nagra ord med anledning av ett fall av 'conjunctivitis Parinaud) K Stålberg—p 1209
78 The Borderline Between Teratology and Tumors (Fran gransgebitet mellan missbildning och svulst) C Heijl—p 1215

76 **What Becomes of Patients with "Inoperable Cancer"?**—Troell has traced to date all the patients with gastric cancers deemed inoperable at the Serafimer hospital at Stockholm, between 1907 and 1914 In 137 cases a palliative gastro enterostomy was done, and merely an exploratory laparotomy in 134, while no intervention of any kind was attempted in 30 Among the 70 gastro enterostomy cases traced to date, death followed in from one to thirty-five months in all but 3, but these 3 patients are still living after intervals of from six to eight years, and also 2 of the exploratory laparotomy cases, although the interval since has been over six years The most surprising finding, however, was that 3 patients in the group of 30 unoperated cases are still living from over four to eight years since to date although conditions had been found apparently so grave that even a palliative operation had not been attempted These 9 surviving cases are analyzed The trouble was evidently an ulcer instead of a cancer in most Symptoms at times since have indicated this But the patients have been clinically healthy most of the time, and the stomach shows nothing pathologic now in the one case examined with roentgenoscopy In another case, as also in a more recent one, pernicious anemia had been mistaken for gastric cancer In one case the trouble proved to be abdominal tuberculosis or a syphilitic affection, to which the patient finally succumbed In connection with this case Troell relates a recent case in which a man of 54 with stomach symptoms had a tumor which could be felt beneath the left costal arch It was assumed to be an inoperable gastric cancer Ascites developed and supposed metastases were palpated in the abdomen The man was very thin but did not seem to have cancer cachexia and a positive Wassermann reaction cleared up the diagnosis The other gastro-enterostomy patients survived from one to thirty-five months This average survival of seven and a half months after gastro-enterostomy is surpassed by the average survival of fifteen to twenty months in the 183 resection cases in Troell's service, 1888-1914 The primary mortality with resection was only 22 and 19 per cent, while it was 17 per cent in the gastro-enterostomy cases This surprisingly high mortality from this makeshift operation of gastro-enterostomy is another argument in favor of resection instead of gastro-enterostomy, even when the cancer is close to the limits of operability

77 **Parinaud's Conjunctivitis**—Stalberg reviews the literature on this affection and reports a case in a girl of 17 A tuberculous origin seemed probable, especially as erythema nodosum developed later Probably various germs may induce this clinical picture No treatment seems to do much good, but in future he intends to give Finsen radiotherapy a trial

Norsk Magazin for Lægevidenskaben, Christiania

September LXXVII No 9 pp 1125 1252

79 *Treatment of Disease in Uterine Adnexa (Om betændelser i uteri adnexa) T Hesselberg—p 1125
80 Social Service in American Hospitals (Socialt arbeide ved amerikanske hospitaler) K Motzfeldt—p 1160
81 *Cancer in Norway Institutions (Hvor mange av Norges kreft patienter dør paa anstalt?) M Søegaard—p 1169
82 The Chemistry of Colloids and Immunology M von Krogh (Argentina)—p 1177

79 **Disease in the Uterine Adnexa**—Hesselberg refers to pathologic processes of all kinds in the tubes and ovaries, the peritoneum of the small pelvis and the connective tissue around the uterus It is often difficult to decide whether puerperal infection or gonorrhea was the primary cause Other causes may be lack of cleanliness during the menstrual period, infection from preventive measures, or appendicitis Pain is the main symptom, and it may occur with comparatively insignificant adhesions or cicatricial changes A slightly retracted sacro-uterine ligament may cause severe pain which is liable to be labeled neurasthenic With an acute process, a relatively low pulse speaks for a subperitoneal parametritic process while a rapid pulse locates the process in the peritoneum as a rule He discusses whether to operate or not, citing numerous authorities and analyzing his own experience in 59 cases Patients with salpingo-oophoritic tumors or parametritic infiltration were kept in bed not only through the febrile stage and as long as there were pains but until there was no further retrogression of the tumors The women were thus kept in the clinic for forty-five days on an average, the range being from three to eighty-seven days Moist heat is applied until the temperature is normal and hot air after this from electric light bulbs, heating to 70 C, from half an hour to one hour daily Adhesions were treated with massage unless they were so firm that a laparotomy was required for them Parametritic adhesions are massaged with both hands, for several minutes at a time, and this is repeated a few times a week or oftener according to the sensitiveness of the patient The uterus is grasped with the hand from without and worked to and fro between this hand and the fingers in the vagina while applying direct massage besides

The results of these measures are regarded as highly satisfactory, but Hesselberg warns that massage does not remove a kink or obstruction preventing conception, as a rule Adhesions holding the uterus in pronounced retrofixation may be broken up by massage, but the subjective disturbances are liable to return, compelling artificial fixation of the uterus later so that a laparotomy at once is advisable with extreme retroflexion He tried to correct conditions through an opening in the vagina in two cases, but could not obtain adequate access and the disturbances returned Sixteen pages are devoted to tabulation of the details in the fifty-nine cases The longest course required was in a case of criminal abortion with bilateral tube and ovary tumors The genital findings were apparently normal when the young woman was dismissed after eighty days of bed rest and local electric light baths

81 **Cancer Patients in Norway's Institutions**—Søegaard makes a plea for more beds for cases of inoperable cancer in the various public and private institutions He has compiled from all the public and private hospitals, asylums and other institutions the number of inmates dying in them from cancer during 1911 The total is only 289, while the mortality from cancer that year is known to have been 2 292 Only one eighth of incurable cancers thus get institutional care, while the figures for England show that one fourth have it there

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83 Confirmation of Etiologic Importance of Bordet Gengou Bacillus in Whooping Cough (Fortsatte Undersøgelser over Kighoste) I Chievitz and A H Meyer—p 1443
84 Cystic Dilatation of Lower End of Ureter in Woman (Om cystisk Dilatation af Ureters vesikale Del) S Prior—p 1457

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FERTILITY AND STERILITY

A HISTOLOGIC STUDY OF THE SPERMATOZOA, THE OVARIES, AND THE UTERINE AND VAGINAL SECRETIONS IN THEIR RELATION TO THIS QUESTION *

EDWARD REYNOLDS, M.D.
BOSTON

No fact is more evident in practice than that the differential diagnosis of the cause of sterility in a given "mating" demands prolonged and accurate study to determine which of the many factors concerned[1] is at fault in the given case. Increasing experience has, moreover, made it evident that the rough clinical methods which I have hitherto used were inadequate for the accurate establishment of such a diagnosis, and has led me to undertake during the last year a somewhat extensive search for more exact methods. The results obtained are already far too voluminous for presentation in any single paper, more especially under the time limitations imposed at this meeting.

The subjects which I mean to take up here in brief abstract are, first, the determination of the original vitality of the spermatozoa deposited by a given male, second, the conditions which permit or prevent effective ovulation, third, the value of microscopic study of both the cellular and bacterial contents of the secretions of the female genitals, and fourth, the microscopic determination of the influence of an individual secretion on the corresponding set of spermatozoa. Many of the points made will be shown in photomicrographs.

The first subject to be taken up is the determination of the fertility of the male who is concerned in the given mating by observation of his spermatozoa.

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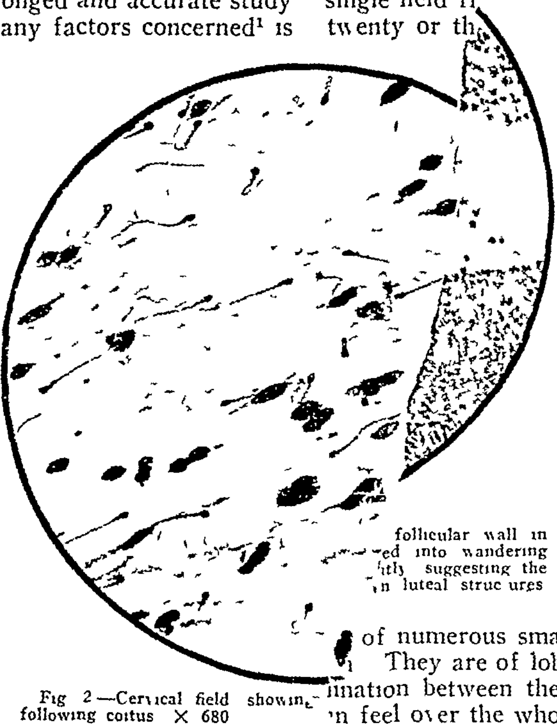

follicular wall in
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Fig 2.—Cervical field showin
following coitus × 680

s must be laid on the basic fact
is a uniparous animal, and her
other animals which normally
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e[9] follicle, and in consequence of
ce of the mature follicle but one
recent and active corpus. The multifollicular and multicorporal condition which is characteristic of pluriparous animals is not normal in the human female.

The ovaries of a fertile woman are, then, characteristically, organs of uniform outline which show not more than one thin-walled and projecting follicle[10] or corpus. They have throughout a characteristic soft and elastic feel when taken between the fingers, except when a single mature follicle or active corpus distends one portion of an ovary and yields its characteristic tactile sensation at that point.

In contrast, the ovaries of sterile women usually show on gross examination the presence of numerous thin-walled projecting folli-
of numerous small imperfect looking corpora,
They are of lobulated outline, and on tactile
ination between the fingers are tense and resis-
n feel over the whole or at all events the greater
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the facts have long been clinically familiar to me
e result of a large number of recorded observa-
made in the course of operative work on fertile
sterile women, respectively. The histologic
lanation of them which I have now to offer is the
lt of recent work

ly studies of serial sections of nineteen ovaries
om fertile[11] and sterile women, or of portions of
nem as removed at operations, have led to a recogni-

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* Chairman's address read before the Section on Obstetri es
cology and Abdominal Surgery at the Sixty Seventh Annual S es
the American Medical Association Detroit, June, 1916 n-
* Because of lack of space, this article is abbreviated ile
Journal. The complete article appears in the Transactio
Section and in the author's reprints

[9] A mature follicle is not only of large size but also protrudes above the surface of the ovary and is visibly thin walled on its external surface

[10] This is probably not always true of those periods in the life of a fertile woman in which ovulation is inhibited namely pregnancy, the puerperal state lactation and perhaps some pathologic condition

[11] The number of sections from fertile women has naturally been limited but has I think been sufficient

tion of histologic differentiations of type which correspond fairly closely with the differences in gross conditions

Three types of mature follicles and two types of corpora are differentiated with ease, and the distribution of these types in the ovary is of much functional importance

For purposes of primary classification these types of follicles and corpora will be here designated as the A, B and C follicles and A and B corpora, and will now be described

The normal follicles, which will be designated as A follicles, show in completeness three important layers, the external theca, the internal theca and the membrana granulosa, in one point of which latter is developed in these follicles the discus proligerus which contains the ovum

The presence of the normal discus and ovum is of course the essential characteristic of the normal and functionating follicle (Fig 4)

In a mature A follicle the membrana granulosa is present as a continuous lining in the whole follicle Such an A follicle normally enlarges, and undergoes progressive protrusion from the surface of the ovary until it reaches rupture, when the ovum and at least a part of the discus proligerus are discharged, and the formation of the normal corpus begins

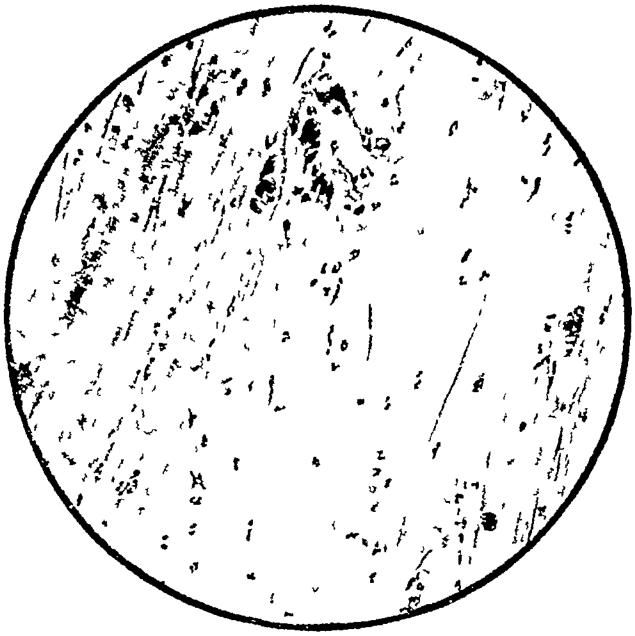

Fig 16 —Field from cervical smear showing customary distribution of leukocytes mucus, and occasional cervical epithelial cells × 150

The second type of follicle, which will be designated as the B follicle, shows a different structural organization In a typical B follicle the two layers of the theca are present and complete, but the membrana granulosa is no longer continuous In fact, the distinguishing characteristic of the mature follicle is that, although it is superficial, protruding from the surface of the ovary, and thin walled like the normal mature A follicle, its membrana granulosa is no longer continuous but is found to be in varying stages of disintegration[12] (Figs 3-6)

The process of disintegration seen in these B follicles may or may not be identical with that seen in the small deeply seated atretic follicles so often described This point is not here entered on, but is reserved for future discussion This B follicle is apparently functionally imperfect Its multiple presence at the surface of the ovary is highly characteristic of the ovaries of sterile women I have not yet seen these superficial and apparently mature B follicles in the ovary of a woman with a fertile clinical history There is abundant clinical evidence that when once formed they are usually long persistent

The type of follicle which has been designated as the C follicle is not important to the purpose of this paper, and may here be dismissed with the statement that these follicles are usually hemorrhagic, differ essentially in the histology of the internal and external theca and are at present regarded as incipient cystomas

The subsequent history of the B follicles apparently imitates to some extent that of the normal A follicles

Sections now under study make it probable that they sometimes rupture, and there are some indications that they also sometimes disappear by absorption

Whether the corpora which result from these follicles are induced by actual rupture or begin without rupture on the complete disintegration of the membrana granulosa is not yet established The absence of the granulosa layer either through discharge of the follicle or through its histologic disintegration into the follicular fluid appears, however, to be constant in the multiple corpora found in ovaries which contain multiple mature B follicles (Figs 13 and 14)

Since these corpora do not always contain typical lutein cells, some histologists may prefer to speak of them as pseudocorpora, but there is clinical evidence that they are of much functional importance

These B corpora are usually smaller than those derived from the A follicle, their development is less full and typical, and as the membrana granulosa of the follicles which form them has disappeared, they are necessarily entirely thecal in their composition

The conditions which govern the production of the B follicles are not yet adequately determined and will require further study Both from the gross characteristics of the ovaries which contain them and from their distribution in the sections it seems probable that conditions of hypertension in the ovary have a causative relation to their occurrence Cert hases of Clark's work on the internal circulatory ons in the ovary are of interest in this connecti

Pressure conditions may xpla
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[12] During disintegration the cells of the membrana granulosa may be seen in the process of separating from it as single cells which wander off into the follicular contents and there apparently disappear individually All stages of the reduction of the membrana granulosa from a layer several cells deep to a single celled layer and in cases to its entire disappearance have been found The discus is the last epithelial structure to undergo this process The destruction of the discus probably destroys the ovum Conclusive evidence on this point is so far lacking but primary changes in the ovum which suggest its depleting vitality have been observed (Figs 9 to 12)

development and will outstrip the others When, exceptionally, two neighboring young follicles undergo development simultaneously, then enlargement progresses until each begins to crowd the other One or both then undergo degeneration while still but partly mature This process is not followed by the development of a corpus On the other hand, the numerous, large, superficial B follicles which characterize the ovaries of sterile women are always accompanied by B corpora also, and such ovaries have not shown a mature A follicle or A corpus

Classification of the nineteen ovaries examined, by the clinical histories of the women who carried them, shows that those which were characterized by the multiple occurrence of superficial (B) follicles and (B) corpora all belong to sterile women, while the few ovaries containing normal (A) follicles or (A) corpora which have yet been seen have all been carried by fertile[13] women

The clinical value of these observations on the ovary evidently depends on the light which they may throw on the choice of therapeutic measures to influence the disappearance of the abnormal condition in nonovulating ovaries as well as on any increased possibility of diagnosing the existence of these conditions in a concrete case to which they may lead

Several previous publications[14] have detailed clinical evidence that conservative operations on the ovaries of sterile women, designed to relieve the undue tension which is characteristic of them, are frequently followed by pregnancy in due course These histologic observations have, however, proved very illuminating when studied in connection with the variations in the operative procedures which were described in those papers and their comparative results Later clinical experience has also shown the great importance of careful adaptation of operative methods to the conditions of the individual case The elaboration of this subject must, however, be reserved for a future paper

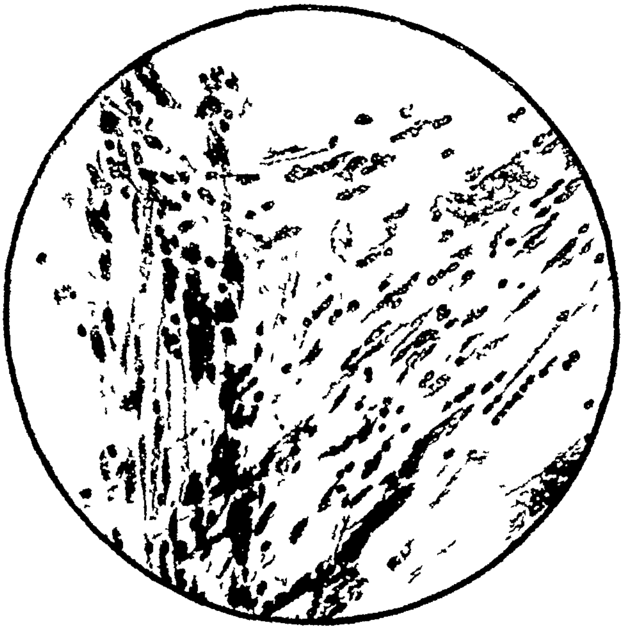
Fig 17 —Field from cervical smear showing high leukocyte content in the cervix and mucous threads, × 340

In my earlier work the diagnosis of ovarian infertility was largely made by exclusion after investigating the other factors in sterility, and finally determined only by inspection of the ovaries after an exploratory abdominal incision Of late years the possibility of making an accurate diagnosis of the conditions which determine nonovulation in clinical work, and in advance of operation has occupied much of my thought, more especially the possibility of differential diagnosis between the ovaries in which undue tension is produced by (B) follicles and those in which it is produced by persistent corpora of either of the two types I had hoped to be ready to present some discussion of this question in connection with this paper, but lack of time for the extended analysis of cases necessary has prevented it It will demand also more extended space than would be possible here It may be said, however, that in favorable cases, by the use of the rectovagino-abdominal examination under anesthesia, and by a careful comparison of the results obtained with the symptomatology, a fair clinical guess of the condition of the ovary can often be made in advance of operation The majority of failures in diagnosis will consist in failing to find evidence of a nonovulating condition which in fact exists Definite evidence of its presence, so obtained, is usually trustworthy

CHARACTER OF THE SECRETIONS OF THE FEMALE GENITAL TRACT

For the sake of clearness I shall first describe the gross appearance and cellular content of the secretions of the uterine body, of the cervix and of the vagina, after which I shall speak of the bacterial flora of the vagina separately

In studying these secretions the chemical reaction, the cell content, and the bacterial content have been particularly watched, the latter two requiring the use of stained smears, of which over a thousand slides have been studied

The secretion of the uterine body is clear and limpid and is normally free from both bacteria and detectable mucus The technical difficulties in the way of obtaining it without contamination from the secretions of the cervix and in quantity sufficient for observation are very great and must make any clinical statements about it somewhat cautious in form It is probably more favorable to the life of the spermatozoon than either of the lower secretions In the few specimens which have been obtained in fair quantity entirely free from trauma (absence of red blood corpuscles), and apparently free from cervical contamination, the secretion has been thin, clear, and almost free from cellular content of any kind

The cervical secretion is, on gross examination, normally alkaline, clear and limpid, but is mixed with quantities of normally clear but tenacious mucus which is the product of the cervical glands It is also normally bacteria free

Its cellular content (Fig 16) consists of detached uterine and cervical cells, leukocytes, and occasionally cells whose appearance suggests their descent from the extreme upper part of the genital tract It shows a marked and most important cyclical variation in correspondence with the period of the catamenial month, indeed, the precatamenial or postcatamenial origin of a given slide can be very accurately predicated from tion of histologic differentiations of type which correspond fairly closely with the differences in gross conditions

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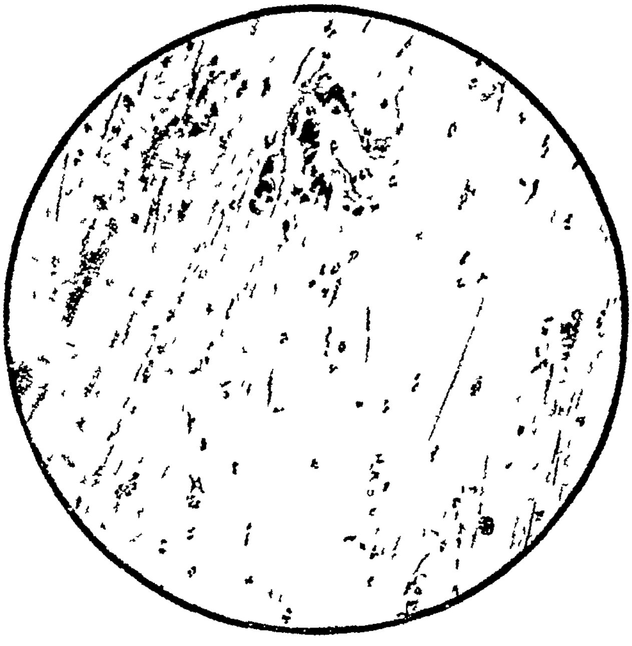

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Pressure conditions may well explain the atretic degeneration which is so commonly seen in immature follicles deep in the stroma Slides in my collection afford some reason for the belief that when several young follicles undergo development too near each other, the occurrence of such a degeneration is nature's method of disposing of the superfluous follicle, and is followed by absorption, but when such a follicle or follicles is found in a normal ovary, the atretic degeneration has always occurred at an early stage in their development, i e, they are small, occasional in distribution and set deep in the stroma Figure 15 shows well the typical distribution of young follicles in a normal ovary One follicle has begun development and will outstrip the others When, exceptionally, two neighboring young follicles undergo development simultaneously, their enlargement progresses until each begins to crowd the other One or both then undergo degeneration while still but partly mature This process is not followed by the development of a corpus On the other hand, the numerous, large, superficial B follicles which characterize the ovaries of sterile women are always accompanied by B corpora also, and such ovaries have not shown a mature A follicle or A corpus

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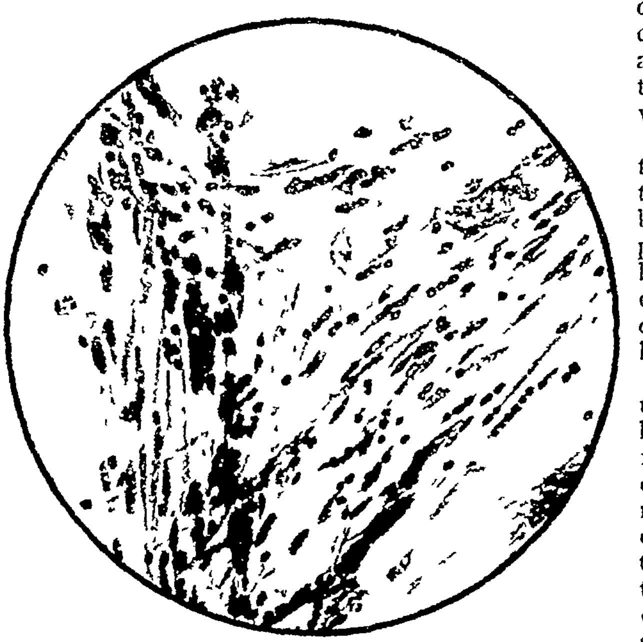
Fig 17 —Field from cervical smear showing high leukocyte content in the cervix and mucous threads × 340

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The upper vagina is destitute of secretory glands The fluids which are found within it are made up mainly of the uterine secretions which escape into it These are probably usually increased to a greater or less extent by osmotic transudation of serum through its walls They are also greatly modified by the products of bacterial activity which are always present in the vagina The vaginal secretion is normally somewhat acid and is normally moderately unfavorable to the spermatozoa Its gross physical characteristics are largely determined by the character of the bacteria which the individual vagina contains

The cell content of the vagina necessarily contains that of the cervix and in addition vaginal epithelium The character of the vaginal epithelium as seen in these secretions varies markedly in correspondence with the age and social condition of the patient

The cell content of both secretions is of marked importance to the estimation of their favorable or unfavorable influence on the spermatozoa, but the variations in the character of the bacterial flora of the vagina are even more important

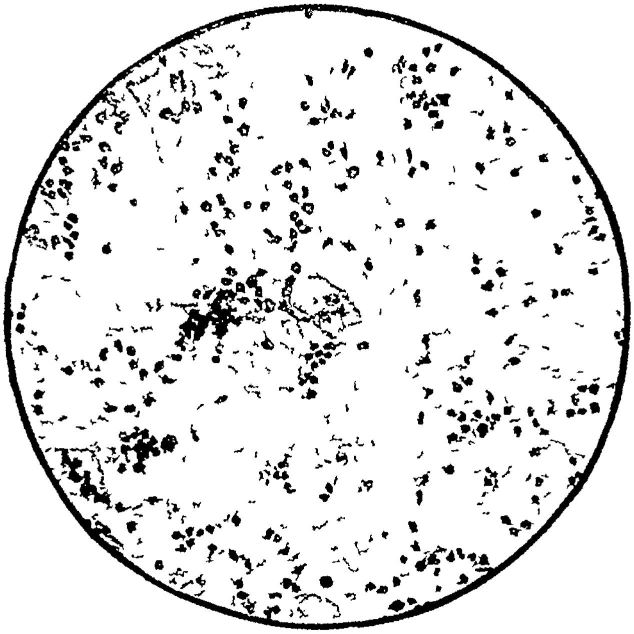

Fig 18 —Field from vaginal smear showing vaginal epithelial cells and high but temporary distribution of leukocytes × 340

SOME PHASES OF THE BACTERIOLOGY OF THE VAGINA

My studies of this have included observations on virgins, widows, fertile married women, sterile married women, and pregnant and puerperal women

The cultural analysis of so complicated a flora as characterizes the vaginal contents is extremely difficult and tedious and the number of cases studied in this way is not as yet large enough for report The study of stained smears has, however resulted in a rough classification of considerable interest and, I think, value

The flora of the virgins and fertile women so far studied have been coccoid and have usually consisted mainly of one form of coccus, homogeneous[15] (Fig 21)

One fourth of the sterile women had a coccoid flora, but these were all cases of short standing and of apparently promising outlook Further clinical analysis of these cases may show that they were instances in which the sterility was not of secretional form, but lack of time has so far prevented this analysis The other three fourths of the sterile cases had bacillary flora usually containing one dominant form of bacilli (homogeneous)

The bacilli in these sterile cases were ordinarily rather low in occurrence and somewhat distinctive in appearance Moreover, they presented a very characteristic distribution of attachment or superposition on the vaginal epithelial cells which is less marked among the other bacillary flora (Fig 22)

All the pregnant and puerperal women had bacillary flora, but these showed always the presence of several forms in approximately equal numbers

The general similarity between the flora of established sterility, on the one hand, and those of pregnancy and the puerperal state, on the other, seems interesting in view of the probable nonovulating condition of the ovaries during pregnancy, and the puerperal state, and in a large proportion of all sterile cases

An entirely unexpected and most curious feature of the bacterial content is the extreme distinctiveness and considerable permanence which is usually characteristic of flora of individual women The bacterial content varies extremely in different cases, and yet remains so constant in each individual case, in occurrence, type and persistence, that the smears of a case under study can practically be recognized by its flora, and can be grouped with other cases of similar content This constancy of the individual flora is especially astonishing when we consider the liability of the vagina of a married woman to the introduction of varying forms Great variations and occasional complete changes would have been expected, *a priori* Such alterations have not been observed[16] The vaginal flora bears no relation to the flora of the penis in any one of the several cases in which smears from both members of the mating have been observed

There is every indication that in spite of the external relations of the vagina, the variations in its flora are not determined by the introduction of bacteria from without (except in the occasional infections by pathogenic forms) but by the secretory conditions of the upper genital tract, which apparently determine the types of bacteria that can obtain a foothold temporarily or establish themselves permanently In other words, the character of the individual flora is probably determined by the environmental conditions of the individual secretions which form its habitat[17]

IMPORTANCE OF MICROSCOPIC CONDITIONS IN EXPLAINING THE HOSTILITY OF A GIVEN SECRETION TO THE LIFE OF THE SPERMATOZOA[18]

The reactions of the spermatozoa to the vaginal and cervical secretions are quite different and must be considered separately The vaginal secretion is normally acid, bacteria laden, and varyingly hostile to the spermatozoa even when admixed with the alkaline semen Although the vaginal hostility is evidently in the main in rough correspondence with the degree of acidity present, our admixture observations show somewhat conclusively that this hostility is in fact the result of the bacterial conditions which belong with the highly acid secretions,[19] in short, that it is enzymatic rather than merely the result of the acid reaction alone [20]

The cervical secretion is normally bacteria free and therefore physiologically favorable to the spermatozoa It is, however, often mechanically hostile to them, and this hostility may be of great *practical importance* It is always present in some degree, cervical mucus is always present, and from its adhesive characteristics can always be seen to enmesh and render motionless many spermatozoa When, however, it is present in unduly large quantity, or in undue adhesiveness it may well decrease the number of effective spermatozoa to a degree sufficient to render impregnation unlikely or impossible

When the cervical leukocytosis is high, the mucus always entangles the spermatozoa with great facility, and from microscopic evidence it has become evident that this condition *may be quite sufficient* to prevent pregnancy in cases which are not only free from symptomatology but present comparatively slight gross evidences of any alteration of the cervical secretion

Vaginal hostility is mainly enzymatic and of bacterial origin Cervical hostility is mainly mechanical and of inflammatory origin

Either or both of these secretions may and frequently do present conditions which absolutely prevent fertility through their destruction of the spermatozoa and which are yet so far external to the physiology of the woman as to excite no ill health, to produce no symptoms other than persistent sterility

The microscopic study of the secretions is of so much practical value that the after-treatment of cases at a distance can sometimes be effectively guided through the study of smears sent by mail

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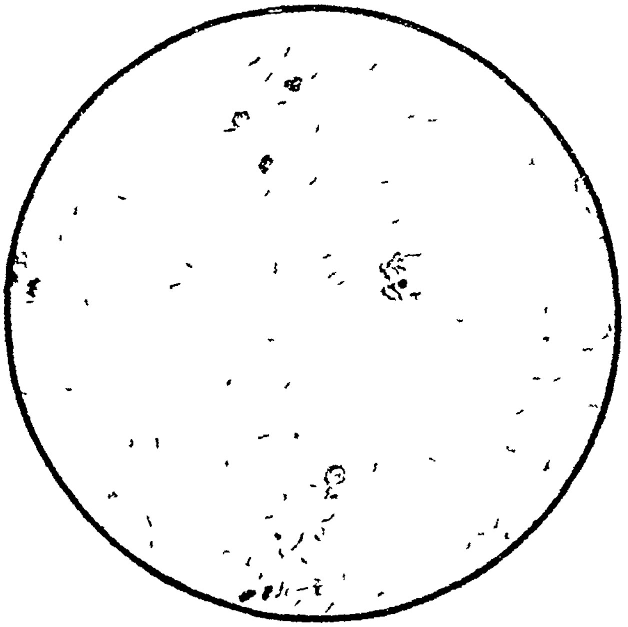

Fig 20—Field from hyperacid vagina in which the epithelial cells have disintegrated leaving the nuclei in free distribution × 680

ABSTRACT OF DISCUSSION

Dr Emil Novak Baltimore Of the many factors which may be concerned in the causation of sterility, I shall discuss only one, the part played by histologic alterations in the ovary The value of Dr Reynolds classification of graafian follicles into various groups is greatly lessened by his failure to recognize that certain of the types described by him are not normally maturing follicles at all, but that they represent follicles undergoing atresia folliculi The female ovary at birth contains something like 70 000 primitive follicles of which number only one a month, or less than 400 during the reproductive life of the woman, ever go on to full maturity and ovulation Many more than this however, after developing up to a certain point are inhibited, the ovum dying and the granulosa becoming thinner and finally disappearing Within certain limits this process is physiologic, although, as in the so-called fibrocystic ovary it may become so exaggerated as to be pathologic The atretic follicle does not, of course, go on to rupture, and hence should not be grouped with the normally developing graafian follicle The corpus luteum is developed after rupture of the latter type of follicle, and never, as Dr Reynolds states *from the atretic follicle*

Dr E Gustav Zinke, Cincinnati There is no one of experience who has not observed, painfully at times, the manner in which some of these unfortunate women are treated by their sometimes stupid or malicious husbands It is often a cause of refined cruelty on the part of husbands who know themselves to be at fault One fact must be remembered, however, and that is that three events are necessary to establish a pregnancy These are a healthy womb the presence of a healthy ovum, and healthy *spermatozoa* When these are present pregnancy invariably takes place I agree with Dr Reynolds that the majority of women are unjustly blamed for the nonoccurrence of pregnancy and that probably more than half of the cases of sterility in women *should* be charged to the other side of the house

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Loss of Life from War and from Disease—At Austerlitz, for example the French lost 14 per cent, the Russians about 30 per cent and the Austrians the enormous proportion of 44 *per cent of the men engaged* At Waterloo the French lost about 36 per cent and the English and Prussians about 31 per cent Taking a score or more of the more important and unusually bloody battles of the last three centuries the losses on both sides together of dead and wounded run from 20 to 35 per cent In many bloody battles the losses of a single side have gone up to 50 per cent These are of course the higher figures At Magenta the French lost 7 per cent and the Austrians 8 per cent, at Lutzen the French lost about 13 per cent and the Prussians and Russians 14 per cent At Antietam one man out of every five engaged was killed or wounded In fourteen months the English army under *Wellington in the Peninsula* lost 4 per cent by gunfire, but it lost 12 per cent from disease—V L Kellogg the character of its cellular content without reference to the clinical history The greatly increased flow of cervical mucus which appears to characterize the postcoital period also modifies the cervical content extensively The variations in the leukocyte content of the cervical secretion are of especial clinical interest Without pretending to enter here into details, it may be said that in many sterile women the cervical leukocytosis (Fig 17) is very like the vaginal leukocytosis in vaginitis The leukocytes are often of very varied types and are distributed mainly, if not entirely, along or in the substance of the mucous threads This condition probably represents a mild inflammatory state in the glands of the cervical mucous membrane

The upper vagina is destitute of secretory glands The fluids which are found within it are made up mainly of the uterine secretions which escape into it These are probably usually increased to a greater or less extent by osmotic transudation of serum through its walls They are also greatly modified by the products of bacterial activity which are always present in the vagina The vaginal secretion is normally somewhat acid and is normally moderately unfavorable to the spermatozoa Its gross physical characteristics are largely determined by the character of the bacteria which the individual vagina contains

The cell content of the vagina necessarily contains that of the cervix and in addition vaginal epithelium The character of the vaginal epithelium as seen in these secretions varies markedly in correspondence with the age and social condition of the patient

The cell content of both secretions is of marked importance to the estimation of their favorable or unfavorable influence on the spermatozoa, but the variations in the character of the bacterial flora of the vagina are even more important

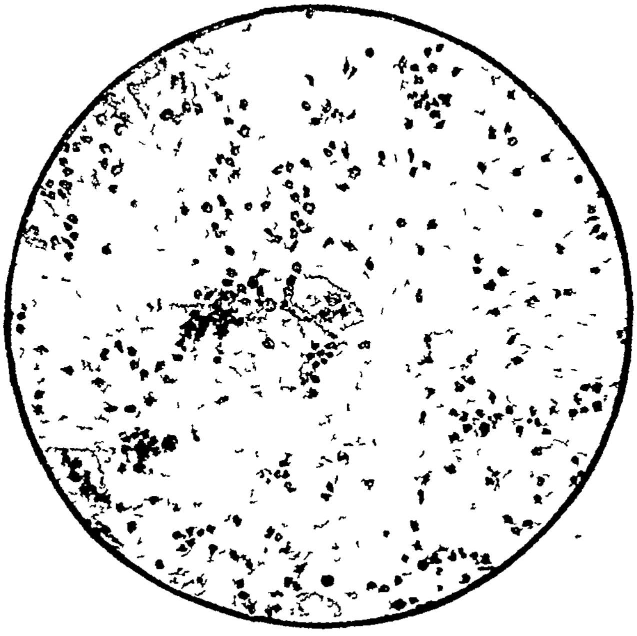

Fig 18—Field from vaginal smear showing vaginal epithelial cells and high but temporary distribution of leukocytes × 340

SOME PHASES OF THE BACTERIOLOGY OF THE VAGINA

My studies of this have included observations on virgins, widows, fertile married women, sterile married women, and pregnant and puerperal women

The cultural analysis of so complicated a flora as characterizes the vaginal contents is extremely difficult and tedious, and the number of cases studied in this way is not as yet large enough for report The study of stained smears has, however, resulted in a rough classification of considerable interest and, I think value

The flora of the virgins and fertile women so far studied have been coccoid and have usually consisted mainly of one form of coccus, homogeneous[15] (Fig 21)

One fourth of the sterile women had a coccoid flora, but these were all cases of short standing and of apparently promising outlook Further clinical analysis of these cases may show that they were instances in which the sterility was not of secretional form, but lack of time has so far prevented this analysis The other three fourths of the sterile cases had bacillary flora usually containing one dominant form of bacilli (homogeneous)

The bacilli in these sterile cases were ordinarily rather low in occurrence and somewhat distinctive in appearance Moreover, they presented a very characteristic distribution of attachment or superposition on the vaginal epithelial cells which is less marked among the other bacillary flora (Fig 22)

All the pregnant and puerperal women had bacillary flora, but these showed always the presence of several forms in approximately equal numbers

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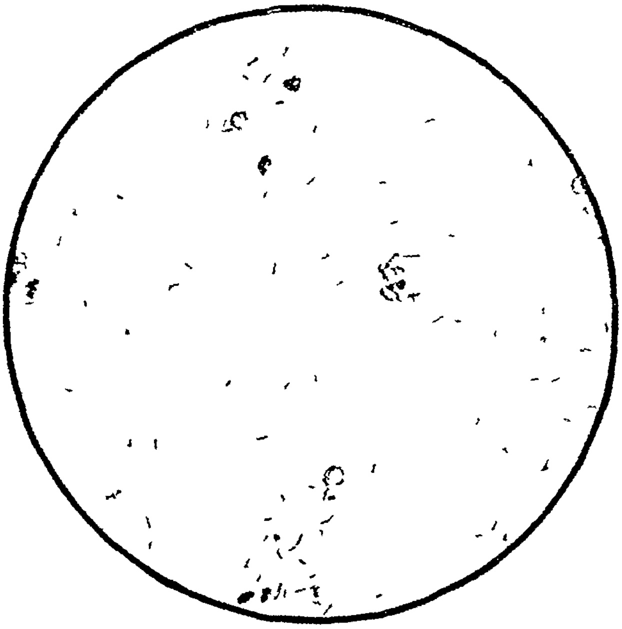

Fig 20—Field from hyperacid vagina in which the epithelial cells have disintegrated leaving the nuclei in free distribution × 680

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EXPERIMENTALLY TRANSPLANTED AND TRANSPOSED WHOLE METATARSAL BONES

W L BROWN, M D
AND
C P BROWN, M D
EL PASO, TEXAS

Since the appearance of Gill's article[1] in 1915 on the transplanting of entire bones with their joint surfaces, the results of those experiments have been widely quoted, comparisons being made with other experiments wherein only parts of bones had been transplanted The results have also been extensively quoted as proof that it is not necessary for bone transplants to be in contact with living osteogenic tissue On superficial observation, it would appear that they were transplants, but as a matter of fact, they were whole bones transposed

We at once realized that there were two factors entering into those experiments which possibly had not been duly considered (1) they were transpositions of whole bones, and (2) they remained in a position in which they had the same function to perform to which they had been accustomed In 1913 we especially called attention to the importance of function to insure the permanency of bone transplants[2] Since that time, the importance of this point has been brought more and more forcibly to our attention Therefore we have repeated Gill's experiments, in part of the cases really transplanting the metatarsal bones, and in the other cases transposing one into the position formerly occupied by the other, as did Gill, making the first a true transplant into the soft tissues, in a position in which there was no function to perform

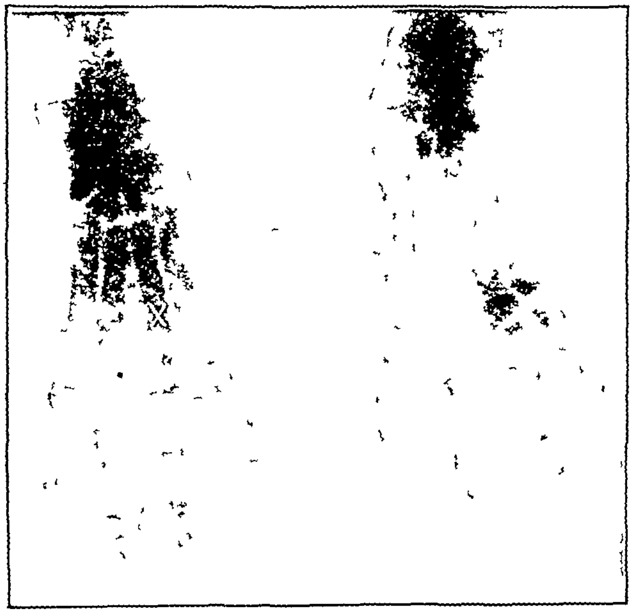

Fig 1 (*Experiment 1*)—Right second metatarsal transposed in position formerly occupied by the left immediately following operation

Experiment 1—In Dog 7, New Series, Jan 21, 1916, black and white tan mongrel, weight 6 pounds, 10 weeks old the second metatarsal bone was taken complete from each foot, including the periosteum and articular cartilages The right was replanted into the space vacated by the left, and the left into the right thigh muscles There was primary union

A roentgenogram taken three months and twenty-six days later shows the bone transposed from the right to the left foot in perfect position and apparently normal in every way. Comparison of this picture with the roentgenogram taken at the time of the operation shows that this bone has not only remained in position, but has actually grown and kept pace with the growth of the other bones of the foot On the other hand, the left metatarsal, which was transplanted free into the thigh muscles of the right side, has practically disappeared This proves we think conclusively, that these transpositions should not be considered exactly in the same light as true transplanting into the tissues

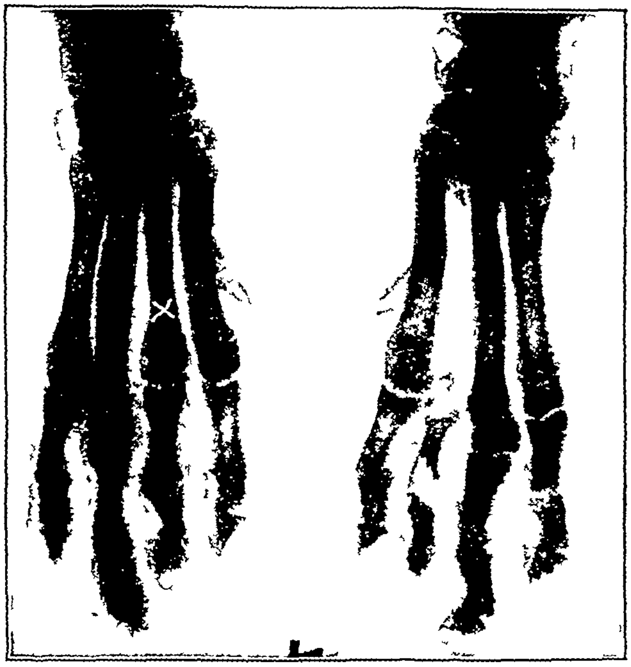

Fig 2 (*Experiment 1*)—Roentgenogram taken three months and twenty six days after transposition shown in Figure 1, bone has not only survived and performed its function, but has actually grown as the other bones of the foot have

Experiment 2—In Dog 10 New Series Nov 6 1915 small mongrel weight 10 pounds 2 years old the second metatarsal of the right forefoot was removed complete including the articular cartilages and periosteum, and transplanted into the left thigh muscles. There was primary union This dog died three months and one day later and the roentgenogram shows that the transplanted metatarsal is rapidly undergoing absorption

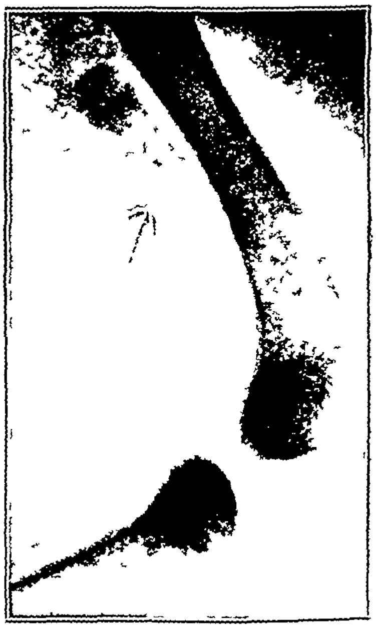

Fig 3 (*Experiment 1*)—Left second metatarsal bone transplanted into thigh muscles immediately following operation

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[1] Gill Transplanting of Entire Bones with Their Joint Surfaces Ann Surg June, 1915

[2] Brown W L and Brown C P Surg Gynec and Obst, 1913 xvii 681

Experiment 3—In Dog 9, New Series, Dec 7, 1915, the second metatarsal was removed, including the periosteum and articular surfaces, and planted into the right loin, free into the muscles There was primary union

The roentgenogram taken five months and ten days later shows the transplant almost absorbed

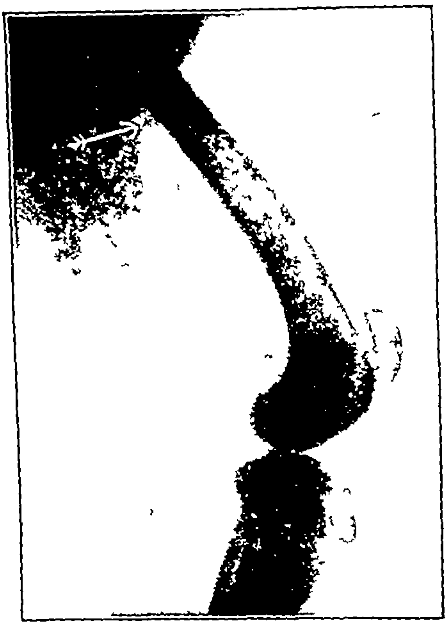

Fig 4 (Experiment 1)—Same as Figure 3 three months and twenty six days later almost completely absorbed

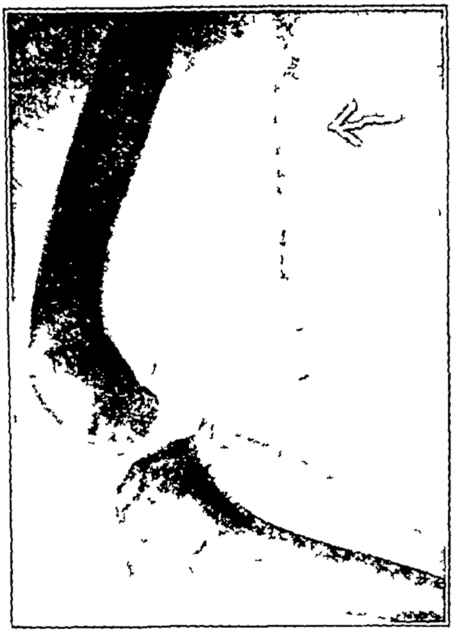

Fig 5 (Experiment 2)—Second metatarsal right forefoot transplanted into the muscles of the thigh

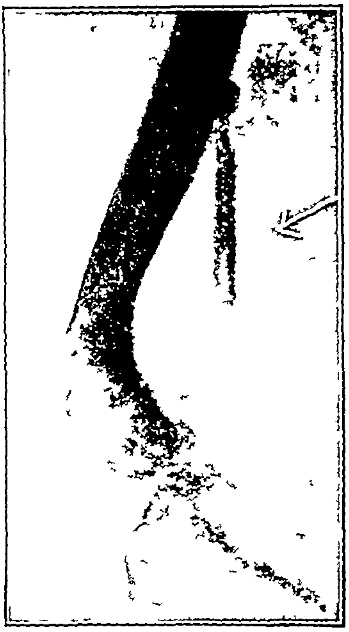

Fig 6 (Experiment 2)—Same as Figure 5, three months and one day later absorption well advanced

While altogether six experiments were performed, the foregoing are sufficient to bring out the point we wish to emphasize

TECHNIC

All the dogs' feet and sides for the transplants were prepared, after the dog was anesthetized with ether, by shaving and painting with full strength tincture of iodin

Following the operation, all wounds on the feet were dressed with a liberal quantity of phenolated gauze and adhesive plaster

The wounds of the thighs and backs were always dressed with collodion and cotton There were no infections

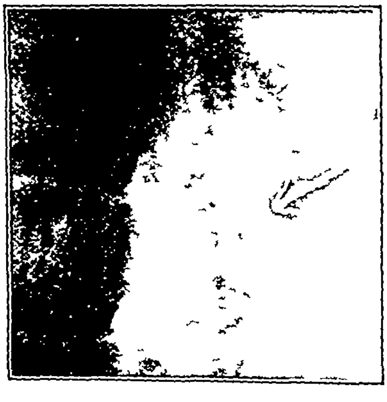

Fig 7 (Experiment 3)—Second right metatarsal including periosteum and articular surfaces planted into right loin free in the muscles

CONCLUSIONS

1 True transplantation of a part or whole bone into the tissue, where it has no function to perform, is a very different matter from transposing an entire bone into the bed of its fellow of the opposite side

2 Whole metatarsal bones covered with periosteum their articular ends included, and transposed into the position occupied by their fellow of the opposite side will live, functionate and grow, but when truly transplanted under like circumstances into the tissues, where they do not act as an integral part of the bony framework and have no function to perform, they are invariably absorbed, as are all other transplants under like circumstances, if sufficient time is allowed Hence, the results of the two experiments are not comparable

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The General Practitioner an Investigator—The time is approaching when, in the course of nature, I must fall out of the ranks, and before doing so I wish to look back on my medical career to see what light my experience may throw on medical science The life of a general practitioner is not considered one that can help much in the advance of medicine, it is, indeed, regarded so lightly that no steps are ever taken to train one who intends to become a general practitioner in any branch that would enable him to undertake research work You know well that if a man aspires to research work it is to the laboratories or to the hospital wards he is sent As a result of my experience, I take a very different view, and assert with confidence that medicine will make but halting progress while whole fields essential to the progress of medicine will remain unexplored, until the general practitioner takes his place as an investigator The reason for this is that he has opportunities which no other worker possesses—opportunities which are necessary to the solution of problems essential to the advance of medicine But before the part that the general practitioner alone can play is understood, we must look on the science of medicine, its teaching, and its pursuit with new light in our eyes—Sir James Mackenzie

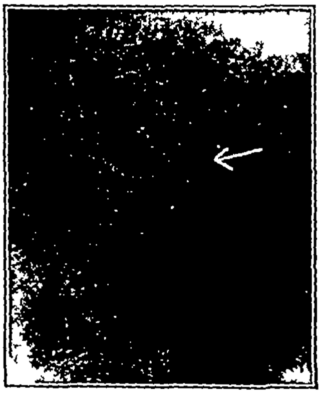

Fig 8 (Experiment 3)—Same as Figure 7 five months and ten days later only a flattened thin irregular piece of bone left

THE ETIOLOGY OF EPIDEMIC POLIOMYELITIS

PRELIMINARY NOTE *

E C ROSENOW, M D
ROCHESTER, MINN
E B TOWNE, M D
BOSTON
AND
G W WHEELER, M D
NEW YORK

After Landsteiner and Levaditi[1] and Flexner and Lewis[2] demonstrated independently that the causative agent of epidemic poliomyelitis could be passed through a bacterial filter, the disease was classed with those caused by a filterable, ultramicroscopic virus The bacteria of ordinary size were no longer considered of etiologic importance, and when obtained were discarded as *postmortem* invaders or accidental contaminations Wickman,[3] after reviewing the earlier experiments with streptococci, says, "The time has fully arrived when such investigations should be discarded from the literature of the disease"

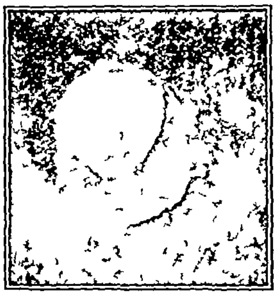

Fig 1—Cross section of Kaiserling specimen of left tonsil removed four hours postmortem in Case 758 acute poliomyelitis in child aged 15 months × 2¼ Part of the material in the abscess cavity which lies against the capsule of tonsil fell out during hardening

In *1913*, Flexner and Noguchi[4] cultivated and demonstrated microscopically a small filterable micro-organism with which they produced poliomyelitis in monkeys They note that "the cultural conditions are those that apply more particularly to the bacteria," but do not attempt definitely to classify the micro-organism

Rosenow[5] has shown by the use of special methods that the specific localizing power of bacteria is an important factor in the etiology of various diseases, including diseases of the nervous system We felt, therefore, that a reinvestigation of the bacteriology of poliomyelitis by the newer methods was desirable Accordingly we have made a bacteriologic study of throats, tonsils, blood, spinal fluid, the central nervous system and other tissues in cases of acute poliomyelitis in the present epidemic both in Rochester, Minn, and in New York City, with particular reference to the infecting power of the bacteria isolated The methods employed were similar to those used by Rosenow and the methods used by Flexner and Noguchi in their studies of poliomyelitis

A peculiar polymorphous streptococcus has been isolated, often in large numbers, from the throat, from the material expressed from tonsils, and from abscesses in tonsils[6] (Fig 1) of a large series of cases of epidemic poliomyelitis It has been obtained from the ventricular fluid after death, and from blood during life in one instance, but not from the spinal fluid By emulsifying in a sterile air chamber a rather large amount of brain and cord obtained under sterile precautions, and inoculating ascites-dextrose broth, ascites-dextrose agar and ascites fluid containing sterile tissue with varying amounts of the emulsion, we have succeeded in isolating this peculiar streptococcus from brain and cord in each of twelve cases of poliomyelitis in New York City which came to necropsy, and also from the intervertebral ganglia and lymph nodes in some of these cases Mathers[7] has already reported similar results from the brain and cord The micro-organism has also been recovered in four instances from recently glycerinated pieces of brain and cord

The micro-organism which we have isolated in cases of human poliomyelitis produces on aerobic blood-agar plates fine, dry, nonadherent, slightly green colonies at times showing in forty-eight hours a narrow, hazy zone of hemolysis On this medium, as well as in ascites-dextrose agar, the organisms are quite uniform in size and resemble pneumococci, but are usually smaller and free from demonstrable capsule In tall tubes of ascites-dextrose broth with or without sterile tissue there is usually an early diffuse turbidity, or there may be a flocculent growth which collects along the side of the tube and gradually settles to the bottom Early smears show short chains of diplococci resembling pneumococci, a smaller number of medium-sized cocci *in pairs, and occasionally very small coccus forms* After the first week, the number of small forms is relatively greater, and they have largely become gram-negative After about three weeks, large clubbed involution forms appear In ascites plain broth with or without sterile tissue, growth is slower, being noted usually after about thirty-six hours It tends to appear near the bottom of the tube and extends upward as a moderate turbidity The organism has the same morphologic characteristics, but is about two-thirds the size of that grown in dextrose broth Old cultures show clumps of very small coccus forms In ascites fluid containing sterile tissue the growth appears as a slight haziness near the bottom of the tube on the fourth or fifth day when cultures are made of human or animal brain and cord Transplants from other mediums grow out in one or two days, and show more marked early

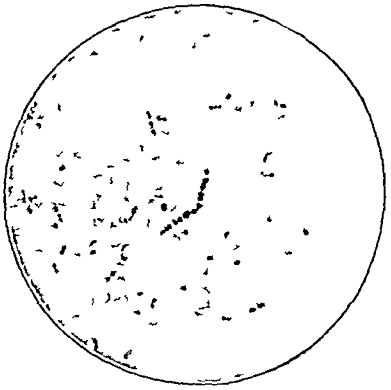

Fig 2—Photomicrograph of forty eight hour culture in ascites dextrose tissue broth of Berkefeld N filtrate of emulsion of brain of Rabbit 1017 injected intravenously with pure culture of the streptococcus from poliomyelitis after two rabbit passages Note the marked variation in size and shape of the organism the chain of large diplococci and micrococci with a small diplococcus on one end chains of medium and small diplococci and those of extremely small diplococci and the medium sized single coccus forms Gram stain × 1 000

turbidity In a very few instances the early smears have shown the tiny globoid bodies described by Flexner and Noguchi in apparently pure culture, but usually there have also been a certain number of medium-sized diplococci in short chains, which Flexner and Noguchi and others have considered contaminations These larger forms tend to grow smaller, so that frequently at the end of twelve or fourteen days nothing but the tiny globoid bodies, single, in pairs, chains and clumps, could be found in the same tubes These appear to be identical with those described by Flexner and Noguchi After about three weeks the organisms become both larger and smaller, the small forms get beyond the limit of visibility, and nothing but rather large oval cocci staining a pinkish tint with the Giemsa stain are seen

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* From the laboratories of the Mayo Foundation and the New York Hospital

[1] Landsteiner K and Levaditi C La transmission de la paralysie infantile aux singes Compt rend Soc de biol 1909 lxvii 592

[2] Flexner Simon and Lewis P A The Nature of the Virus of Epidemic Poliomyelitis The Journal A M A Dec 18 1909 p 2095

[3] Wickman I Acute Poliomyelitis Nervous and Mental Diseases Monograph Series 16 New York 1913 p 6

[4] Flexner Simon and Noguchi H Experiments on the Cultivation of the Micro Organism Causing Epidemic Poliomyelitis Jour Exper Med 1913 xviii 461

[5] Rosenow E C Elective Localization of Streptococci The Journal A M A Nov 13 1915 p 1687 Elective Localization of Bacteria in Diseases of the Nervous System Aug 26 1916 p 662

[6] The importance of the constant finding of such abscesses in tonsils at necropsy in cases of poliomyelitis was emphasized in a discussion by Rosenow of Dr Robert W Lovett's paper *The Management of Poliomyelitis* ' before the New York Academy of Medicine Oct 5 1916

[7] Mathers George Some Bacteriologic Observations on Epidemic Poliomyelitis The Journal A M A Sept 30 1916, p 1019

Transplants from one to another of these three liquid mediums disclose a marked tendency of the micro-organism to change to the form characteristic of the medium in which it is planted Thus, an apparently pure culture of the very small globoid bodies in ascites tissue fluid when transferred to ascites-dextrose tissue broth grows out rapidly, often in twenty-four hours, into the characteristic polymorphous streptococcus Similarly a transplant from broth to ascites fluid tends to grow slowly smaller

Cultures of Berkefeld N filtrates of emulsions of brain and cord of rabbits dead from paralysis following intravenous injection with suspensions of broth cultures showing only the large forms have repeatedly grown out in this characteristic form in each of these three culture mediums Cultures showing the small forms have been filtered, and cultures of the filtrate have grown, but no growth has been obtained from filtrates of cultures of the same strains showing only large forms The same emulsions filtered through dense porcelain candles have, with one exception, always been sterile

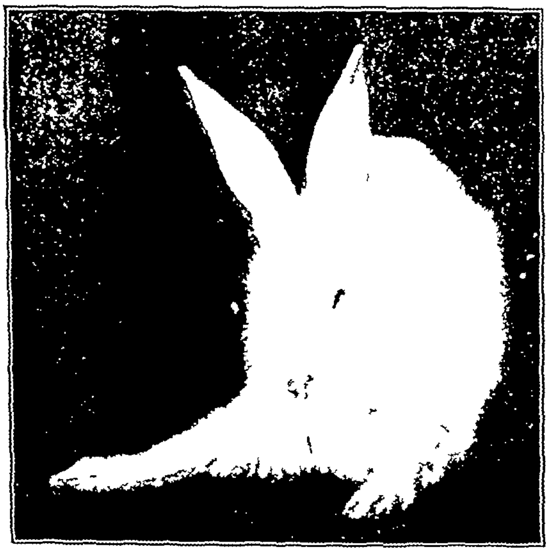

Fig 3—Rabbit 939 showing flaccid paralysis of right front leg Aug 11 1916

In all the liquid mediums during the early days of growth, chains are often found in which there are single members of all sizes and shapes — large diplococci, large coccus forms, small diplococci and small coccus forms This has occurred in strains which have been fished successively several times from single colonies of shake and plate cultures, and in those from filtrates (Fig 2)

The fermentative reactions of subcultures of a number of these strains have been tested Two thirds of them fermented inulin, the remainder did not

Paralysis with lesions in the central nervous system has been produced in guinea-pigs, rabbits, dogs, cats and monkeys by intravenous or intracerebral injection with this peculiar streptococcus from practically all of fifty-two cases of acute poliomyelitis It has been produced by injecting the emulsions of pus expressed from the tonsils, emulsions of extirpated tonsils, and emulsions of the brain It has followed injection of the primary mixed culture containing chiefly this peculiar streptococcus, and by injection of the pure cultures from throats, from the material expressed from tonsils, and from the abscesses in tonsils removed from living patients and necropsy cases It has been produced consistently also with the pure cultures obtained from the brain and cord While on aerobic cultivation and in dextrose-containing mediums the organism soon loses the power of causing paralysis paralysis has been produced with strains in the third culture generation from successive single colonies

Young animals were more susceptible, but the older ones were not always immune While those which received large doses of culture often showed paralysis within thirty-six hours, the incubation period was usually from three to five days The early paralyses were usually accompanied by evidences of pain in the affected extremity, and the animals so affected were apt to die within twenty-four hours of the onset, as the process extended rapidly and caused respiratory failure The onset of later paralyses, especially in rabbits, was sometimes preceded by a fine tremor or even definite twitching of the muscles which later became flaccid These animals appeared generally well, and took food normally In most cases the paralyses spread and death occurred within two or three days A number of animals, however, showed slow but definite improvement and did not die One guinea-pig had a ptosis, and one monkey a seventh nerve paralysis, as initial symptoms In some the reaction began with evidence of meningeal irritation which went on to general spasticity, convulsions and rapid death

At necropsy the paralyzed animals showed congestion of the vessels of the meninges, and hemorrhagic edema surrounding the dura of the cord, especially anteriorly and extending along the nerve roots and ganglia A majority had dilatation and fine hemorrhages in the gray matter of the cord and brain The lymph glands commonly showed hyperemia and at times hemorrhage and edema Animals which had ataxia and tremor usually showed areas of hemorrhagic infiltration of the cerebellum There was a noteworthy freedom of lesions in other organs Microscopic sections have not yet been examined in sufficient numbers to warrant a definite report, but those examined (from rabbits, guinea-pigs and monkeys) showed small hemorrhages, degeneration of nerve cells, some round-cell infiltration and neurophagocytosis

The organism has been isolated in pure culture and often in large numbers from the nervous tissue in numerous animals injected with cultures when blood and other tissues were sterile or contained the organism in smaller numbers It has been demonstrated microscopically in and adjacent to the lesions in the brain and cord In animals in which paralysis occurred early and which died soon after injections of large doses, the large forms only have thus far been found, while in those which died after a long period of incubation, both large and small forms have been demonstrated

We have isolated the same organism from brain and cord of paralyzed monkeys injected intracerebrally with fresh emulsions of brain and cord from human poliomyelitis (fresh human virus), with glycerinated human virus and glycerinated monkey virus[8]

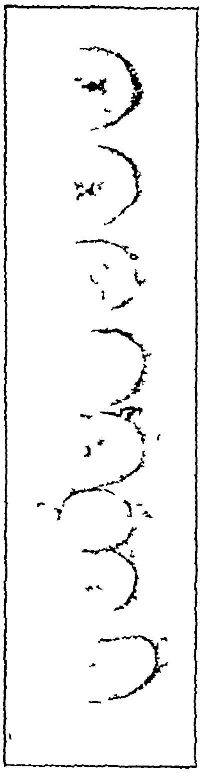

Fig 4—Rabbit 939, sections of Kaiserling specimen of cord × 2 From above downward Sections 1, 2, 3 4 and 5 are cervical cord Sections 6 and 7 dorsal cord Section 8 lumbar cord Note hemorrhages in gray matter chiefly in anterior horns

ILLUSTRATIVE EXPERIMENTS

Case *686*—S A, *boy, aged 5 years* complained of stiff neck, July 18 July 20, he had a temperature of 102 When seen with Dr Sheldon in the Mayo Clinic, July 21, there was weakness of the left shoulder and arm, and flaccid paralysis of the left deltoid, triceps and scapular muscles The left grip was weaker than the right, the fingers moved slowly, and there was evidence of extensor weakness No reflexes could be obtained in the left arm

From the left tonsil there was expressed a soft greenish plug, about 1 5 by 2 5 mm, and from both tonsils a rather large amount of liquid pus was obtained

The material expressed *from the tonsils* was emulsified in 2 c c of salt solution, and cultures and animal injections were made One series of rabbits and guinea-pigs was injected immediately with the emulsion of the tonsil pus, and another series July 22, with the cultures

Eighteen-hour cultures of the tonsil pus gave the following results

1 Blood agar plate showed enormous numbers of very fine, dry, green-producing streptococcus colonies, some of which were surrounded by a narrow *zone of hazy hemolysis, and a few colonies* of staphylococcus and *Micrococcus catarrhalis*

2 Ascites-dextrose broth (tubes and bottles) showed apparently pure cultures of streptococci in short and medium long chains and in pairs Some of the diplococci were large and lanceolate in shape, resembling pneumococci, and others were small and more coccus-like Both large and small forms were found in the same chain

In all, injections were made into thirteen animals—seven rabbits, five guinea-pigs and one dog Of these the dog and *all but one of each* of the rabbits and guinea-pigs showed either evidence of paralysis during life or lesions of the brain and cord after death The following three protocols illustrate the results obtained

Rabbit 930—Weight, 690 gm July 21, injection of 0 5 c c of sodium chlorid emulsion of tonsil pus 686, the organisms of which appeared on blood agar plates as fine, green-producing streptococci, slightly hemolytic streptococci staphylococci and *Micrococcus catarrhalis,* were made into the cerebrum The animal was found dead eighteen hours later Necropsy revealed lesions of skeletal and heart muscles but no external abnormality of brain or cord Cultures of the blood were sterile Ascites-dextrose broth and blood agar plate cultures of the spinal cord showed pure cultures of streptococci, appearing as fine, dry, green colonies on the plate In sections of the brain and cord after hardening, seven small hemorrhages were found in the gray matter of the cord and two larger hemorrhages in the anterior portion of the medulla Microscopically, these areas showed hemorrhage, slight round-cell infiltration and diplococci and streptococci in the vicinity of the hemorrhagic areas

Rabbit *936*—Weight, 1,040 gm Injected intravenously, July 24, with a growth from 30 c c of ascites-dextrose broth suspended in 2 c c sodium chlorid solution of the spinal cord of Rabbit 930 Blood agar plates of the culture injected showed fine, dry, green-producing streptococcus colonies in pure culture The rabbit was found dead the next morning Necropsy showed no focal lesions Ascites-dextrose broth culture of blood gave an apparently pure culture of streptococci in pairs and short chains Blood agar plate of blood *showed a pure culture of very small, dry, green-producing* streptococcus colonies, a few of which were surrounded by a narrow, hazy zone of hemolysis

Rabbit *939*—Weight, 1,160 gm Injected intravenously, July *26,* with 5 c c of an ascites-dextrose broth culture of the blood of Rabbit 936 The animal seemed perfectly well up to August 11, sixteen days after the injection, when at 11 a m it showed flaccid paralysis of the right front leg, which lay stretched out and could not be brought under the body (Fig 3) Otherwise he seemed well, and took food normally At 3 p m the left front leg was also weak, and he was unable to lift the thorax from the floor At 4 p m respiration became shallow, irregular and labored, there was evidence of *meningeal and cerebral involvement* (retraction of head and convulsions) Death occurred at 5 p m Necropsy showed no gross lesions August 12, the spinal cord and fluid incubated over night showed diplococci, short chains and clumps of streptococci The individual organisms in chains showed marked difference in size, varying from approximately one fourth that of a pneumococcus to the full size of a pneumococcus Cross sections of the cord after fixation in Kaiserling I for twenty-four hours showed diffuse hyperemia *of the gray* matter throughout, and areas of hemorrhage in the gray matter which were *most marked* in the cervical region (Fig 4) Microscopic sections of all portions of the cord showed many small and medium-sized areas of hemorrhage in the gray matter, *especially* in the anterior horns Moderate round-cell infiltration was noted throughout the gray matter The ganglion cells, particularly of the anterior horns in the cervical region, showed marked degeneration and neurophagocytosis In the intervertebral ganglia, there was degeneration and phagocytosis of the ganglion cells, and moderate lymphocytic infiltration Gram stains of sections of the cord showed rather small gram-positive diplococci, single and in short chains In several areas of hemorrhage showing deposit of blood pigment, there were found large numbers of cocci, some in pairs and chains, showing marked variation in size (Fig 5)

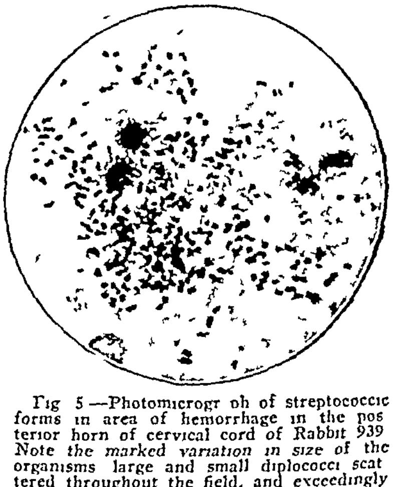

Fig 5—Photomicrograph of streptococcic forms in area of hemorrhage in the posterior horn of cervical cord of Rabbit 939 Note *the marked variation in size* of the organisms large and small diplococci scattered throughout the field, and exceedingly *small forms in the short chains* to the left of the center The dark irregular areas to the left are deposits *of* blood pigment Gram Weigert × 1 000

Case 714—Monkey 12 (*Macacus rhesus*) was injected intravenously, September 9, with suspensions in salt solution of the growth from 30 c c of ascites dextrose and 30 c c *of plain* broth, mixed, obtained from the brain of Rabbit 1017 in pure culture This organism formed characteristic fine dry green colonies on blood agar plate and appeared as an ordinary-sized streptococcus in broth The strain came from the emulsions of brain in a case of poliomyelitis in which *the necropsy was held, August 24,* and *had passed* in pure culture of large forms through three rabbits in succession Each rabbit had shown marked *flaccid* paralysis after from three to seven days with gross and microscopic lesions quite similar to those described above for Rabbit 939

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[8] Kindly sent us by Dr G W McCoy of the U S Public Health Service Washington D C

September 11, the left arm was weak, slight wrist drop and poor grip The animal took food normally and seemed well

September 12, condition of arm was stationary, or perhaps improved a little The animal was injected intravenously with the growth from 30 c c of the same culture, which in the meantime had been in the ice box, and showed the same growth in subculture on plate and in broth

September 14, both arms were weak The animal was irritable and excited

September 15, the animal was quiet and inclined to lie down, it got on its haunches with great difficulty

September 16, complete wrist drop was shown on left, flaccid paralysis of left triceps and deltoid, weakness of back muscles, and coarse tremor of right triceps and extensors of thighs The animal ate well if food was put where he could reach it with his head This condition went on to complete flaccid paralysis of all muscles of extremities and body, respiration became irregular, labored and entirely diaphragmatic. Marked cyanosis At 7 30 p m, the animal was almost dead, he was chloroformed, and examined at necropsy at once

Cross sections of the cord showed hyperemia of the gray matter with areas of hemorrhagic infiltration, more marked in anterior horns and about the central canal There were no other gross lesions Cultures of the brain and cord gave the usual polymorphous streptococcus in pure culture in almost every tube Microscopic sections of the cord (Fig 6) showed numerous hemorrhages in the gray matter, with degeneration of the ganglion cells of the anterior horns There was moderate infiltration with lymphocytes and neuronophagia Diplococci were demonstrated in the tissues

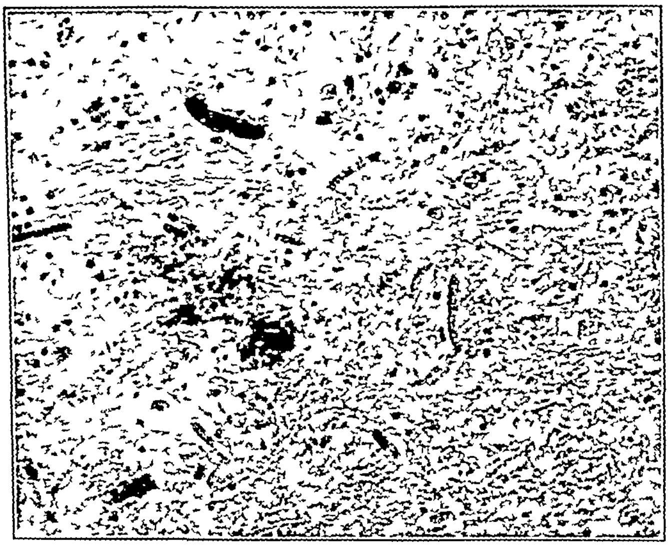

Fig 6—Photomicrograph of cross section of anterior horn of cervical cord of Monkey 12 Note the marked dilatation of vessels the hemorrhage the degeneration of ganglion cells and round cell infiltration with neuronophagia Hemotoxylin and eosin × 140

SUMMARY

We have isolated a peculiar streptococcus from throats, tonsils, abscesses in tonsils and from the central nervous system in cases of poliomyelitis Paralysis has been produced in animals of various species by intravenous and intracerebral injection of cultures of this organism, and lesions of the gray matter of their nervous system have been demonstrated From the nervous system of these animals the streptococcus has been isolated in pure culture, while their other tissues were sterile, it is remarkably polymorphous, and appears to grow large or small according to the medium in which it is grown, even after passage through a Berkefeld filter

Using the organism in its large form, paralysis has been consistently produced in animals known to be insusceptible to inoculation with material from epidemic poliomyelitis as heretofore practiced After paralysis had been produced in a series of three rabbits, the strain caused characteristic paralysis and lesions of poliomyelitis in monkeys

The exact relation of our results to the facts already established as to the etiology of poliomyelitis cannot yet be definitely stated It appears to us that the small, filterable organism which has been generally accepted as the cause of poliomyelitis may be the form which this streptococcus tends to take under anaerobic conditions in the central nervous system and in suitable culture mediums, while the larger and more typically streptococcic forms, which investigators have considered contaminations, may be the identical organism grown larger under suitable conditions

The Mayo Foundation—Peter Bent Brigham Hospital—New York Hospital

We are indebted to Drs W H Park, Anna Williams and H L Abramson of the New York department of health for part of the necropsy material

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EXPERIMENTAL STUDIES IN THE ETIOLOGY OF ACUTE EPIDEMIC POLIOMYELITIS *

JOHN W NUZUM, M D
AND
MAXIMILIAN HERZOG, M D
CHICAGO

For several years it has appeared that the etiology of acute epidemic poliomyelitis has been successfully cleared up by the work of Landsteiner and Popper[1] and by that of Flexner[2] and his co-workers Lewis, Noguchi and others Landsteiner and Popper in 1908 first succeeded in transferring the disease to various species of monkeys by intraperitoneal inoculation of human poliomyelitic brain and cord They were able to produce a disease in the monkey which in its clinical, pathologic and histologic features was quite similar to acute poliomyelitis in man According to these workers, mice, rats, guinea-pigs, dogs, cats, goats, sheep and horses proved refractile to the disease

Many conflicting statements occur in the literature as to whether or not the virus of poliomyelitis can be transmitted to the rabbit Krause and Meinicke assert that they have produced the disease in seven generations of rabbits, and more recently Rosenau and Havens[3] have successfully passed the virus of the disease through eight generations of young rabbits

Flexner and Noguchi have been able to obtain the filterable virus in pure culture, employing the anaerobic ascitic fluid culture medium, to which a sterile piece of rabbit's kidney is added

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* From the Pathological Laboratory of the Cook County Hospital Chicago

* The experimental studies of the authors have been very materially aided by a special grant made by President Peter Reinberg and the members of the Board of Commissioners of Cook County, Ill and by a special appropriation of the Health Department of the City of Chicago

[1] Landsteiner and Popper Uebertragung der Poliomyelitis acuta auf Affen, Ztschr f Immunitatsforsch 1909

[2] Flexner and Noguchi Jour Exper Med 1913 xviii 461

[3] Rosenau and Havens Jour Exper Med, April 1916

SOURCE OF MATERIAL

During the recent epidemic of poliomyelitis, nearly all cases of the disease in Chicago were isolated in a special ward in the Cook County Hospital There has been a relatively large number of fatal cases, indicating that the infecting micro-organism is of unusually high virulence Necropsies have been performed on a considerable number of these fatal cases, and the brain, spinal cord, tonsils, mesenteric lymph glands, and body fluids have been removed under sterile precautions very shortly after death and while the bodies were still warm Cultures were made immediately from the brain and spinal cord in various mediums The central nervous tissues were then preserved in 50 per cent sterile glycerin for future use

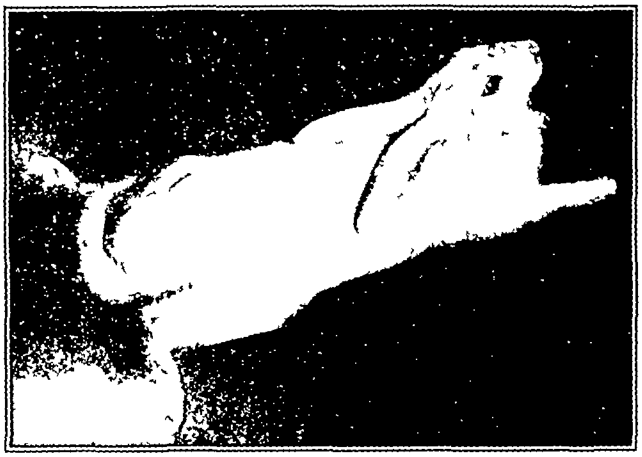

Fig 1 —Complete flaccid paralysis produced seventy two hours after the injection of 1 c c of an aerobic culture from a human poliomyelitic brain Intraperitoneal injection

RESULTS OF CULTIVATION

From cultures of the brain and cord in nine different cases examined a gram-positive micrococcus was obtained in pure culture In one case the *B subtilis* was present as a contamination Aerobic and anaerobic cultures were regularly made from small pieces of the human brain and spinal cord inoculated into sterile ascites fluid, ascites dextrose broth, and ascites fluid to which a small piece of sterile rabbit's kidney was added The cultures were placed in the incubator at 35 C (95 F) for from one to ten days

In the aerobic cultures, bacterial growth usually appeared at the end of twenty-four hours as a fine granular grayish precipitate along the side of the test tube, rapidly settling to the bottom of the tube to form a heavy white sediment In anaerobic cultures made according to the method of Flexner and Noguchi, bacterial growth is slow Usually after four or five days — often as long as seven — a scanty growth first manifests itself as an opalescence arising around the tissue fragments in the bottom of the test tube and gradually ascending upward in the medium Later a fine granular precipitate forms which falls to the bottom of the culture tube

Morphologically the micro-organism, when grown aerobically, is a gram-positive micrococcus arranged in pairs and tetrads chiefly, but also appearing in short chains of from three to five It presents essentially a diplococcus arrangement In anaerobic cultures and in the human ascitic fluid mediums to which a sterile piece of rabbit's kidney is added, growth is scanty and the organism appears in a much smaller form, at the end of two or three days it has been repeatedly observed as a very minute micrococcus and barely visible under the oil immersion lens It stains by Gram's method and appears in pairs, short chains of from three to five, and in small clumps After from five to seven days' growth under anaerobic conditions, it often closely approximates in size an early twenty-four hour growth of the micrococcus grown aerobically

On blood agar plates the organism appears at the end of forty-eight hours as a pin point colony surrounded by a narrow zone of hemolysis and often exhibiting a slight greenish color When a growth has once been obtained, subcultures grow rather luxuriantly on the usual cultural mediums It ferments the saccharids with the exception of inulin and raffinose *Gelatin is liquefied at room temperature* The thermal death point of the micro-organism has been found to be an exposure of 55 C (131 F) for thirty minutes It stains with varying intensity with the anilin dyes

From the cerebrospinal fluid obtained by lumbar puncture from patients suffering from acute poliomyelitis, the same gram-positive diplococcus arranged in pairs and short chains has been isolated in pure culture in eight out of nine cases after cultivation aerobically on ascites dextrose broth to which a fragment of sterile rabbit's kidney has been added Moreover, it has been possible in several instances to isolate from the crypts of the tonsils and from the tonsils and mesenteric lymph glands secured at necropsy an organism presenting the morphologic characteristics described above which, when injected into animals intraperitoneally, has produced both the clinical and microscopic changes which characterize acute poliomyelitis

That the micro-organism resists glycerinization has been proved in at least one instance It has been possible to obtain a pure culture of the micrococcus from the brain and cord in a human case of the disease after a period of thirty-five days' preservation in sterile 50 per cent glycerin

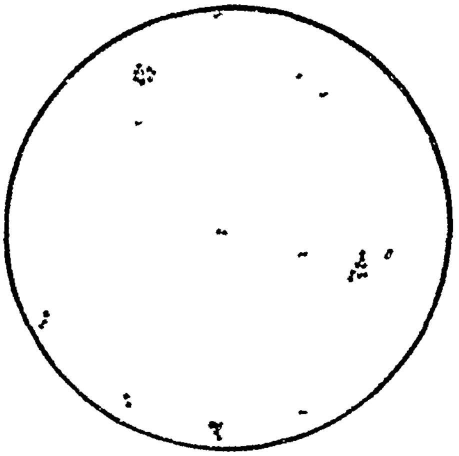

Fig 2 —The micro organism as it appears when grown for from seven to ten days anaerobically

ANIMAL INOCULATIONS

Thus far we have inoculated intraperitoneally, intracerebrally, intravenously, and by nasal insufflation a series of fifty rabbits The cultures utilized for these animal inoculations were obtained from the brain and spinal cord and the mesenteric lymph glands in fatal human cases, and also from the tonsil crypts and in a few instances from tonsil abscess pockets of patients sick with the disease In a considerable number of the animals it has been possible to produce a most striking type of progressive flaccid paralysis involving both hind limbs, the front legs, only one leg, or in three cases all four legs The animals rapidly emaciate and usually die within from one to three days after the onset of a progressive paralysis Others recover entirely, and many are apparently not affected even by repeated injections Examples of successful rabbit inoculations follow

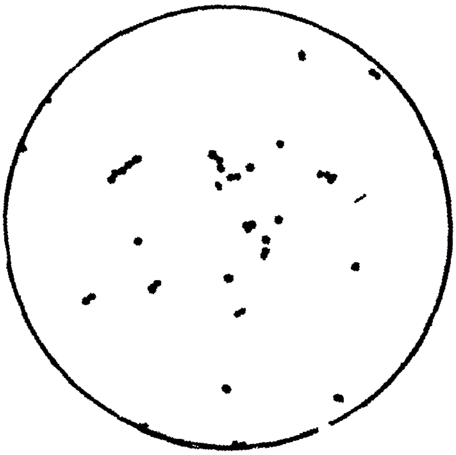

Fig 3 —Usual arrangement of the micrococcus when cultured aerobically

Case 1 (P IV) —*History*—Small white rabbit, blue cross on nose Sept 9, 1916, intraperitoneal injection of 1 c c of a four day human culture from the medulla of fatal case A

Sept 12 1916 complete flaccid paralysis of both hind legs Animal drags hind legs when it attempts to crawl along 11 a m, animal prostrate with head drawn back and rapid respirations Death

Necropsy—Peritoneum smooth and glistening No free fluid No gross changes in the abdominal or thoracic viscera Marked hyperemia of the pia-arachnoid membranes over the cerebral cortex Spinal cord hyperemic and edematous

Microscopic Examination—Serial sections through the lumbar level of the spinal cord and the medulla reveal a marked degeneration of the motor ganglion cells Marked satellitosis Congestion of the vessels in cross section with scattered areas of punctate hemorrhages Marked interstitial infiltration of the gray matter No perivascular infiltration

Bacterial Stain—Serial sections of the medulla stained with eosin-methylene blue A minute diplococcus also in occasional short chains visible in the gray matter of the cord

Cultural Examination—Cultures yield a pure growth of a gram-positive organism similar in all respects to the original micrococcus injected

Case 2 (P XXI) —*History*—Small brown rabbit Sept 15 1916 12 p m intraperitoneal injection of 3 c c of culture of the tonsils of G

September 17 animal is thin and emaciated Active

September 21, 8 a m rabbit has a marked flaccid paralysis of both front feet Unable to move front legs 9 a m complete paralysis of the neck muscles and animal is unable to raise its head Death at 10 a m

Necropsy—Marked hyperplasia of the spleen and mesenteric lymph glands Moderate hyperemia of the pia-arachnoid membranes over the cerebral cortex and about the brain stem

Microscopic Examination—Marked degeneration of the ganglion cells in the cervical level of the cord Also degeneration seen in the medulla Neuronophagia marked Punctate hemorrhages and an interstitial infiltration of the gray matter

From a careful study of these rabbit inoculations it seems fair to conclude that the organism isolated in the cases of the disease can give rise to a flaccid paralysis in rabbits which resembles acute poliomyelitis clinically, but histologically differs from the human in that no perivascular infiltration is present and that the types of infiltrating cells are probably not lymphocytes

Moreover, the organism is of low virulence for rabbits and guinea-pigs The elective affinity of the organism for the brain and spinal cord of rabbits does not apparently increase by animal passage The incubation period varies from thirty hours to fourteen days The micro-organism shows no tendency to produce a meningitis or peritonitis in rabbits

Thus far we have been able to produce a flaccid paralysis of both hind legs in young dogs by an intracerebral injection of a small dose of the micro-organism as isolated from human brains The paralysis has been attended by a persistent diarrhea and marked emaciation in one dog None of these animals has succumbed as yet

Repeated injections of this micrococcus into guinea-pigs have thus far failed to produce any paralysis In the monkey it has been possible to produce typical acute poliomyelitis even with relatively old cultures of the micro-organism An example follows

Case 3 (M IV) —Sept 28 1916 small ringtailed monkey etherized and head and abdomen shaved and sterilized Intraperitoneal injection of a mixture of five strains of the micro-organism isolated in aerobic cultures from the brains of five human patients, namely Cases A, G1, B W, and Du Also 0 5 c c of foregoing mixed culture injected into the left frontal cerebral region after trephining the skull

September 28 6 p m, animal has recovered from the anesthesia and no postoperative paralysis is present

September 30 8 a m monkey very quiet and drowsy in the cage Greenish yellow nasal discharge Monkey is weak and careful examination reveals a complete flaccid paralysis of the right upper arm and a marked spastic paralysis of the right hind leg Palm of right front leg is cold Involuntaries

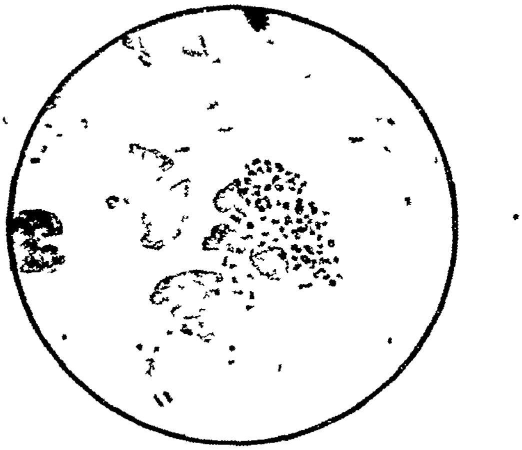

Fig 4 —Contact smear made from the cerebrum of the monkey dying of acute poliomyelitis Ingestion of the micrococcus by the leukocytes

September 30 6 p m, monkey prostrate, death

Necropsy—Abdominal and thoracic viscera negative except for two small tuberculous ulcers of the distal ileum and several small conglomerate tubercles in the left lung Marked hyperemia of the pia-arachnoid membranes over the cerebral cortex Edema of the cord and minute visible hemorrhages in the substance of the cord At the site of inoculation there is a small blood cyst Contact smears from the surface of the cerebrum yield many minute diplococci some ingested by the leukocytes

Microscopic Examination—Typical acute poliomyelitis Marked degeneration of the ganglion cells with perivascular and interstitial lymphocytic infiltration of the gray matter of the cord and brain Neuronophagia prominent in the intervertebral ganglia

In 1905 Geirsvold,[4] in a preliminary communication, stated that he had successfully isolated from the cerebrospinal fluid in twelve acute cases of poliomyelitis a gram-positive coccus, occurring in pairs, short chains and tetrads He stated that he was able to make cultures of this micro-organism on a variety of mediums and further that he was able to produce definite paralysis in white mice, rabbits and pigeons No histologic report was made regarding the central nervous system of these paralyzed animals

It is not at all improbable that the organism described by us is identical with the micro-organism isolated by Mathers[5] from the brain and spinal cord in acute fatal cases This would seem the more probable since the brains and cords obtained at the postmortem examinations were in a number of instances divided equally between us for cultural study, although the work has been done independently by each of us

Landsteiner and Popper, and, working independently, Flexner and Lewis determined that the virus of poliomyelitis passes through a Berkefeld filter In at least two instances we have been able to pass an aerobic culture of poliomyelitic brain through a Berkefeld filter V, and by making a culture of the filtrate on dextrose ascites broth containing a sterile rabbit's kidney, we were able to obtain a pure culture of the micrococcus described above

SUMMARY

1 We have obtained from the postmortem material in typical cases of poliomyelitis, from tissues of the central nervous system, tonsils and mesenteric glands, and from the cerebrospinal fluid obtained by lumbar puncture during life, a gram-positive micrococcus which grows well on dextrose ascites broth to which a sterile piece of rabbit's kidney has been added — but always better aerobically than anaerobically

2 Cultures of this organism, when injected into monkeys, produced the typical clinical and pathologic picture of acute poliomyelitis Definite flaccid paralysis has been produced in dogs and in many young rabbits In rabbits, however, as others have pointed out before us, there is a variation in the microscopic picture, although many of the changes attendant on the disease in man and monkeys are present in the central nervous system of the rabbit following paralysis

3 Anaerobic cultures in fluid mediums were passed through Berkefeld filters V, and inoculations of the filtrate into suitable mediums produced a growth of the larger form of the organism seen in aerobic cultures This would seem to indicate that the organism under anaerobic conditions assumes a form so small that it may pass through the Berkefeld filter The virus of rabies, as is well known, presents itself in a large form, the Negri bodies, and in the small punctiform granules which can evidently pass the filter In considering the gram-positive coccus in its etiologic relation to acute poliomyelitis, we must remember that it may act as a carrier of a real ultramicroscopic invisible virus which, together with this micrococcus, might still be transferred in the cultures and passed along in the inoculations

4 In tissues from the central nervous system of poliomyelitic material preserved in 50 per cent sterile glycerin, this same micrococcus was alive after a period of thirty-five days, and could be cultivated in pure culture on suitable mediums

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4 Geirsvold, M Norsk Mag f Lægevidensk 1905 iii 1280

5 Mathers George Some Bacteriologic Observations on Epidemic Poliomyelitis The Journal A M A Sept 30 1916, p 1019

A NEW INSTRUMENT FOR THE CLINICAL MEASUREMENT OF DARK ADAPTATION *

HARRY S GRADLE, M D

CHICAGO

The measurement of the dark adaptation of the eye has usually been confined to laboratory observers because of the time such an examination requires and because of the complexity of the instruments used Consequently, valuable clinical information has frequently been overlooked To simplify this examination, I devised an instrument for clinical use and adopted an empiric standard of dark adaptation units

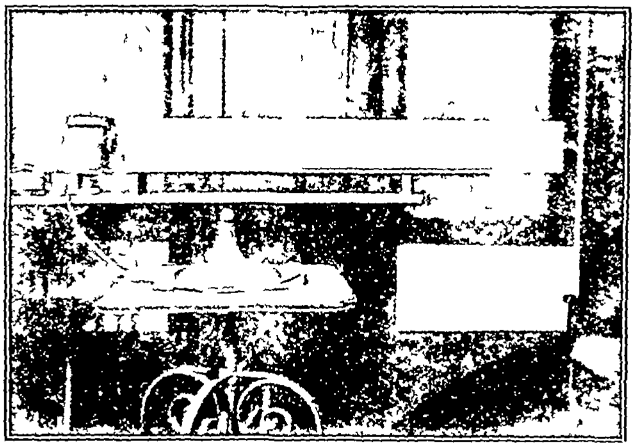

Fig 1 —Instrument for clinical measurement of dark adaptation

The instrument consists of a standard, on which is mounted a light-proof box exactly 1 meter long and 12 cm high and wide (Fig 1) At one end is an open eye piece so shaped as closely to approximate the orbital rim (Fig 2 *A*) At the other end of the box is an iris diaphragm, *E*, whose diameter can be varied from 1 to 15 millimeters Two and five-tenths cm beyond this is another iris diaphragm, *F*, with an opening ranging from 10 to 25 mm in diameter This diaphragm is in a black chimney covering a 50 watt, 110 volt carbon-filament lamp, that is controlled by the rheostat, *H* In the exact center of the box is a steel plate, *B*, out of the middle of which is cut a cross, 4 cm in size, with arms 4 mm wide Behind it is an opal glass plate *C*, and at the end of the box, a ground glass plate, *D*, both for the purpose of diffusing the light

For a clinical examination of dark adaptation, the patient is *seated for five minutes in the dark room*, which is illuminated by three 60 watt tungsten lamps This is for the purpose of bringing all eyes to as near a uniform state of adaptation as possible The lights are then turned out and the patient is seated before the instrument with the eye to be examined applied to the eye piece and the other eye closed The iris diaphragm, *E*, is closed as far as possible, and the light diaphragm, *F*, set at a predetermined point, 10, 15, 20, or 25 mm The rheostat is set at the least measurable resistance

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* Read before the Section on Ophthalmology at the Sixty Seventh Annual Session of the American Medical Association Detroit, June 1916

The patient is instructed to exclaim as soon as the cross becomes visible As nearly every one is more or less astigmatic, the complete cross will not come into view immediately, but one or the other arms will appear first and then be followed by the entire cross The iris diaphragm is gradually opened until this point is reached Notation is then made of the diameter of the iris diaphragm and the light diaphragm and of the number of ohms resistance introduced by the rheostat The measurement is repeated every five minutes, the intensity of the illumination being gradually decreased by increasing the number of ohms resistance introduced

TABLE 1 —DARK ADAPTATION UNITS AT 68 OHMS RESISTANCE

Iris Diaphragm	Light Diaphragms			
	25	20	15	10
15 0	187	226	302	453
14 5	190	234	313	469
14 0	194	242	324	486
13 5	201	250	336	505
13 0	208	261	349	524
12 5	217	273	363	546
12 0	226	283	378	567
11 5	238	296	394	592
11 0	247	309	410	618
10 5	260	325	431	649
10 0	272	340	453	680
9 5	287	350	478	718
9 0	303	378	504	756
8 5	321	401	535	803
8 0	340	425	567	850
7 5	365	446	610	911
7 0	397	486	654	972
6 5	325	527	704	1 051
6 0	453	567	755	1,131
5 5	611	625	803	1,250
5 0	569	680	906	1 360
4 5	604	765	1,019	1 530
4 0	680	850	1,133	1 700
3 5	915	974	1 322	1,983
3 0	950	1 139	1,511	2,266
2 5	1 105	1,417	1 866	2 833
2 0	1,360	1 700	2 222	3,400
1 5	2 040	2,550	3 383	5 100
1 0	2,720	3,400	4 544	6 800

TABLE 2 —DARK ADAPTATION UNITS AT 136 OHMS RESISTANCE

Iris Diaphragm	Light Diaphragms			
	25	20	15	10
15 0	363	453	604	906
14 5	375	469	625	938
14 0	388	486	647	971
13 5	408	504	672	1 008
13 0	419	523	697	1,046
12 5	431	545	726	1 089
12 0	453	567	755	1,133
11 5	474	592	789	1,184
11 0	495	617	824	1 236
10 5	519	648	865	1,298
10 0	544	680	906	1,360
9 5	574	717	956	1,435
9 0	604	755	1,007	1,511
8 5	642	802	1 070	1 618
8 0	680	850	1 133	1,725
7 5	728	910	1,214	1,833
7 0	777	971	1 295	1 942
6 5	842	1,052	1,403	2,104
6 0	907	1,133	1,511	2,266
5 5	992	1 245	1,662	2,543
5 0	1 077	1,360	1,813	2,720
4 5	1 198	1,530	2 039	3 060
4 0	1,360	1,700	2,266	3,400
3 5	1 587	1 983	2 644	3,966
3 0	1 814	2 266	3,022	4,533
2 5	2 267	2 611	3,777	5,666
2 0	2 720	2 956	4 533	6 880
1 5	4 080	4,878	6 799	10,200
1 0	5 440	6 800	9 066	13 600

The calculation of the dark adaptation units is empiric, and is dependent entirely on the construction of the instrument The number of ohms resistance divided by the diameter of the iris diaphragm, *E*, multiplied by the diameter of the light diaphragm, *F*, gives an empiric standard To simplify this computation, I compiled the tables for the various conditions (Tables 1-5)

I do not intend in this article to discuss the various phases of normal and abnormal dark adaptation, but shall merely present a composite normal curve of adaptation (Fig 3) This begins between 1,200 and

TABLE 3 —DARK ADAPTATION UNITS AT 204 OHMS RESISTANCE

Iris Diaphragm	Light Diaphragms			
	25	20	15	10
15 0	544	680	906	1,360
14 5	563	704	939	1 408
14 0	582	729	972	1,457
13 5	604	757	1,009	1,513
13 0	627	786	1,046	1,569
12 5	653	818	1,089	1,634
12 0	680	850	1,133	1,700
11 5	710	888	1,184	1,777
11 0	741	927	1 236	1 854
10 5	778	973	1,298	1,947
10 0	816	1,020	1,360	2,040
9 5	861	1,076	1,435	2 153
9 0	906	1,133	1,511	2,266
8 5	963	1,204	1,605	2,408
8 0	1,020	1,275	1 700	2,550
7 5	1,092	1,365	1,821	2,732
7 0	1 165	1 456	1 943	2 914
6 5	1,262	1,578	2,004	3,157
6 0	1 360	1,700	2,266	3,400
5 5	1,496	1 870	2 493	3 740
5 0	1,632	2,040	2,720	4,080
4 5	1 836	2,295	3,060	4,590
4 0	2,040	2 550	3 400	5 100
3 5	2,380	2,975	3,967	5,950
3 0	2 720	3 400	4,534	6 800
2 5	3,400	3,750	8 377	8 500
2 0	4 080	5 100	6,800	10,200
1 5	6 120	7 650	10 200	15,300
1 0	8 160	10,200	13,600	10,400

TABLE 4 —DARK ADAPTATION UNITS AT 272 OHMS RESISTANCE

Iris Diaphragm	Light Diaphragms			
	25	20	15	10
15 0	725	906	1,208	1,813
14 5	751	940	1,241	1 877
14 0	777	971	1,295	1,942
13 5	806	1 008	1 345	2,017
13 0	836	1,046	1 395	2 092
12 5	871	1 089	1,453	2,179
12 0	906	1,133	1,546	2,266
11 5	947	1,184	1 616	2,369
11 0	989	1 236	1,648	2,472
10 5	1,038	1 298	1,730	2,596
10 0	1,088	1,360	1 813	2 720
9 5	1 140	1,435	1,914	2 871
9 0	1,208	1 511	2,015	3,022
8 5	1,284	1,605	2,140	3 212
8 0	1,360	1,700	2,266	3,402
7 5	1,457	1 821	2,428	3,642
7 0	1,554	1,942	2,590	3,885
6 5	1 673	2,104	2,806	4 209
6 0	1,813	2 266	3,022	4 533
5 5	1 994	2 493	3 324	4,986
5 0	2,176	2,720	3,627	5,440
4 5	2,448	3 060	4,080	6,120
4 0	2 720	3,400	4 534	6,800
3 5	3 173	3,966	5,789	7,933
3 0	3,626	4 533	6,045	9,066
2 5	4 533	5,666	7,559	11,333
2 0	5,440	6 800	9,073	13 600
1 5	8 160	10 200	13,601	20 400
1 0	10 880	13,600	18,130	27,200

TABLE 5 —DARK ADAPTATION UNITS AT 340 OHMS RESISTANCE

Iris Diaphragm	Light Diaphragms			
	25	20	15	10
15 0	918	1,133	1,511	2,266
14 5	944	1,173	1 562	2,347
14 0	971	1 214	1 614	2,428
13 5	1,005	1 260	1,678	2,521
13 0	1,040	1,307	1,743	2,625
12 5	1,086	1 361	1,815	2,719
12 0	1,133	1,416	1,888	2,833
11 5	1,187	1,480	1 974	2,961
11 0	1 241	1,544	2,060	3,090
10 5	1,300	1 622	2,163	3,245
10 0	1 360	1,700	2 266	3,400
9 5	1,435	1 794	2,392	3,588
9 0	1 511	1 888	2,519	3 777
8 5	1 605	1,996	2,676	4 013
8 0	1,700	2 124	2,833	4,250
7 5	1 821	2,276	3,035	4 553
7 0	1 942	2,428	3 238	4,857
6 5	2,104	2,630	3 507	5,261
6 0	2 266	2,833	3,777	5 666
5 5	2,533	3,116	4,155	6 233
5 0	2 800	3,400	4 533	6,800
4 5	3 100	3 825	5,099	7,650
4 0	3 400	4,250	5,666	8,500
3 5	3,966	4,958	6 610	10 916
3 0	4 533	5 666	7,555	11 333
2 5	5,666	7,083	9,444	14,166
2 0	6 800	8 500	11,333	17,000
1 5	10 200	12 750	16 999	25,500
1 0	13 600	17 000	22 666	34,000

1,500 units, and increases very rapidly for about half an hour The increase then becomes more gradual, and after about two hours, maximum adaptation is attained *But only in exceptional cases is it necessary* to carry out the measurement for this length of time, half an hour usually sufficing A word of caution should be added Measurements must not be made too near together, as the persistence of after-images will vitiate the results

Despite the fact that I intend to reserve discussion of dark adaptation in various pathologic conditions for a future communication, I feel impelled to speak of the value of the measure of this function as the measure of the comparative density of a corneal scar This is so self-explanatory that I will not go into details, but merely will present two charts representing such conditions Figure 4 shows the curve of dark adaptation of a young man whose right cornea was rather densely scarred during the course of a severe iridocyclitis The vision in that eye is merely finger counting at several feet Figure 5 represents the dark adaptation of an older man shortly after a long and severe attack of herpes zoster corneae in the left eye, with a resultant vision of only 0 3

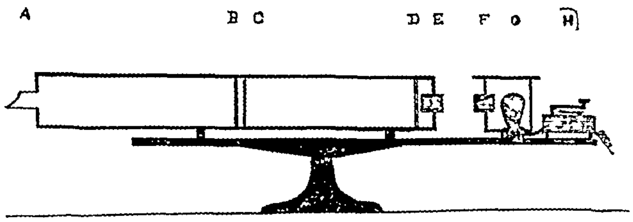

Fig 2 —Sectional view of instrument

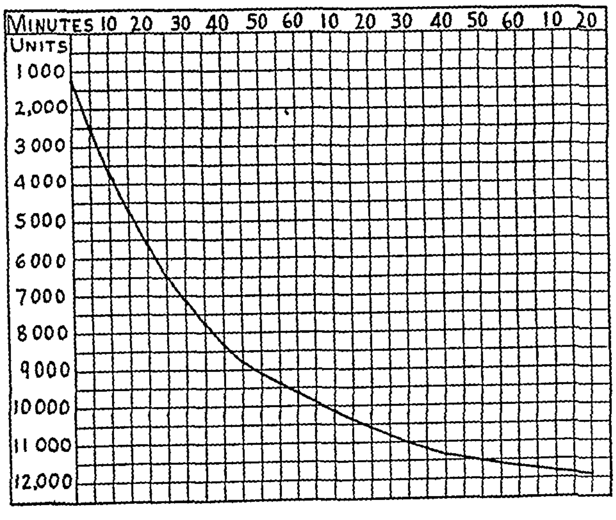

Fig 3 —Composite normal curve of adaptation

32 North State Street

ABSTRACT OF DISCUSSION

Dr Edward Augustus Willis Indianapolis Dr Gradle's instrument may become of great value ultimately It will require many changes, however, before it can be used to distinct clinical advantage For some time I have been endeavoring to have an optical firm make an instrument with which I could measure light perception As you know, for years we have been satisfied to measure in our patients the perception of the form, size and color of objects, but we have neglected tests of ability to perceive certain definite amounts of light Therefore, the question of the perception of light and its value and importance in various diseases probably has not entered into the consideration of many men in their diagnosis and treatment of disease Although this instrument seems to be an opening wedge in determining light tests, I believe from its mechanical arrangement that it is not absolutely adequate for the work intended, because, in the first place, with a rheostat of this sort, even with two iris diaphragms, it is necessary in going from one point of the rheostat to another to have a certain lapse in the amount of light available to the patient's eye Further, instead of having one screen through which to allow the light to pass to give a definite image, there should be several screens, because if a person has one eye examined he will then anticipate the form and light perception through a known screen Further, instead of having a definite form of light there should be a diffuse light How that can be accomplished I am not prepared to say But it seems to me that Dr Gradle has suggested something of enormous importance, particularly in view of the fact that so much work now is being done with colored lenses which of course has its foundation in the proper appreciation of light

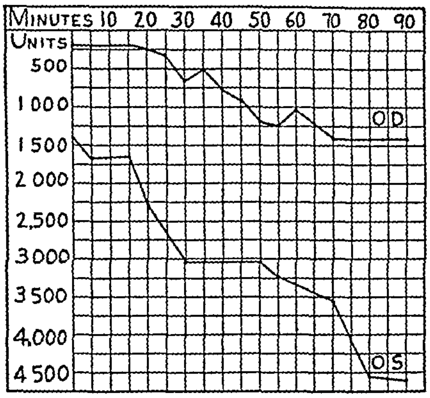

Fig 4 —Curve of dark adaptation in W H a patient with macula corneae in right eye

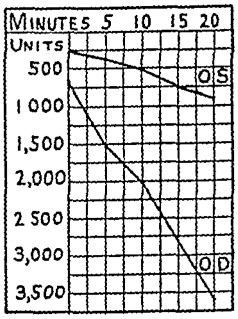

Fig 5 —Curve of dark adaptation in D J E a patient with macula corneae in left eye

Dr Walter B Lancaster, Boston Will Dr Gradle tell us how he measures the strength of light in intensity?

Dr H S Gradle I do not endeavor to measure the intensity of light all I do is to introduce a definite varying number of ohms of resistance into the circuit The street current is fairly uniform and the deterioration of a 50 watt carbon lamp is minimized

Dr Walter B Lancaster Do you use the street current?

Dr H S Gradle Yes

Increase in Street Accidents—The National Highways Protective Association reports that during the month of September sixty-nine persons were killed on the streets of New York, thirty-six of whom were children under the age of 16 years Automobiles caused the death of fifty-three persons, the largest number ever recorded during one month Trolleys killed five and wagons eleven On the streets and highways of New York State during the same period, automobiles caused the death of forty-one persons and trolleys one The report for the first nine months of the year shows that 543 persons have been killed by automobiles on the highways of the state including New York, while during the same period of last year there were 476 fatalities due to this cause

IMMUNE HUMAN SERUM IN THE TREATMENT OF ACUTE POLIOMYELITIS*

C W WELLS, M D
CHICAGO

The question of the treatment of acute poliomyelitis has acquired special interest during the past few months because of the prevalence of the disease in the United States While the administration of serum of persons who have had the disease has been suggested, still the number of cases so treated is so few as to warrant a brief report of the results in fifteen cases

It is held that poliomyelitis is infectious The changes in the central nervous system and its appendages, as well as elsewhere, appear to be of microbic origin, and the resulting edema and hemorrhage produce pressure sufficient to cause paralysis Whatever the underlying mechanism of the process may be, resort to a treatment based on the accepted principles of immunity appears worthy of trial, and such treatment seems to be available, since human immune serum has been found to contain principles capable both of neutralizing the so-called virus of poliomyelitis, and of furnishing protection for animals against inoculation of the virus[1] The first use of immune human serum in acute poliomyelitis was reported by Netter, who employed it in thirty-two cases[2] Recently Sophian[3] has reported four cases, and Alfaro and Hitce[4] one case, making in all thirty-seven cases These observers seem favorably impressed with the method used, which consists in intraspinal injections of sterile immune human serum, in doses of from 2 to 13 c c daily, the total number of injections varying in individual cases

TABLE 1—AGE OF DONOR AND PERIOD OF TIME ELAPSING BETWEEN THE RECOVERY FROM POLIOMYELITIS AND THE CONTRIBUTION OF SERUM

Serum	Age of Donor, Years	Time Since Recovery from Poliomyelitis	Amount of Serum Obtained, C c
A	29	3 weeks	300
B	36	32 years	125
C	24	2 weeks	100
D	17	2 weeks	100
E	44	39 years	100
F	7	2½ years	75
G	8	2 years	125
H	10	9 years	150
I	18	3 weeks	250
J	7	5½ years	100

In all my cases the blood was obtained by puncture of the median basilic vein, collected in sterile glass containers, the serum separated by clotting, and kept at 36 F until used Wassermann tests and a careful bacteriologic examination were made in the case of each serum before it was accepted as suitable for use No preservative was used

Ten donors contributed the serum used in these cases (Table 1) There are no experimental results which throw any satisfactory light upon the duration in serum such as used here of the properties that neutralize the virus of acute poliomyelitis In this series it was noted that Serums B and E, obtained thirty-two and thirty-nine years, respectively, after recovery from poliomyelitis, seemed less active therapeutically than serums obtained earlier

Netter and Sophian gave the serum by intraspinal injection, in doses of from 5 to 10 c c, previously withdrawing an equal or greater amount of spinal fluid In the cases here reported, three different methods have been used, singly and in combination intraspinal injections of from 5 to 10 c c, intravenous injections of from 8 to 50 c c, and intramuscular injections of from 6 to 30 c c Following the intravenous and intramuscular injections, from 10 to 15 c c of spinal fluid were withdrawn

Table 2 gives the manner of injection in each case, the day of the disease, and the results

TABLE 2—METHOD AND TIME OF INJECTION, WITH RESULTS OF TREATMENT

Case	Age	Amount of Serum Injected C c			Day of Disease	Result as to Life
		Intra spinally	Intra venously	Intra muscu larly		
1	16 mo	15	8		6	Recovery
2	4 yrs	16	15		5	Death
3	18 yrs	22	23		7, paralysis 1 day	Recovery
4*	8 yrs	10			5	Recovery
5*	2 yrs	15			9	Death
6*	2 yrs	5	35		5	Death
7	2¾ yrs		8	10	2	Recovery
8	6 yrs	10	33		2	Recovery
9	7 yrs	6	26	30	3 paralysis 1 day	Recovery
10	24 yrs		70		4	Death
11*	3 mo			15	5	Recovery
12	2½ yrs	5	20		4	Recovery
13	7 yrs	16	54	20	3 paralysis 1 day	Recovery
14*	3 yrs		12	24	Paralysis 1 day	Recovery
15	14 yrs			65	3, paralysis same day	Recovery

* These occurred in the Cook County Hospital and were treated at the request of the authorities of the hospital

The object of the use of immune serum in acute poliomyelitis is the neutralization of the toxic or other causative agent by specific antibodies in the serum injected Consequently the indications are to administer the serum in such a manner as to bring it into close and direct contact with the pathogenic agent Heretofore the serum has been injected intraspinally, but, as the cerebrospinal fluid from acute poliomyelitis only infrequently transmits the disease in experiments on animals, a question arises as to the value of introducing therapeutic agents into the spinal canal On the other hand, the lesions in the nervous system, essentially perivascular infiltrations as they are, would seem to call for intravenous injections Further, the lesions in acute poliomyelitis are not confined to the nervous system, but involve also, frequently to a marked degree, various other internal organs, showing the systemic presence of the virus For these reasons, intravenous injection alone, or in combination with intraspinal injection, appears to me to be the logical method of serum treatment In the case of infants, in which it is difficult to introduce a needle into the vein, intramuscular injections may be substituted for intravenous

Following the intravenous or intramuscular injections, a withdrawal of from 5 to 15 c c of cerebrospinal fluid is suggested, in order to reduce pressure and favor circulation in the central nervous system, as is done with good results in the intravenous treatment of cerebrospinal syphilis with neosalvarsan and salvarsan

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* From the Memorial Institute for Infectious Diseases Aided by a grant from the Fenger Memorial Fund

[1] Flexner Simon A Note on the Serum Treatment of Poliomyelitis (Infantile Paralysis), THE JOURNAL A M A, Aug 19, 1916, p 583

[2] Netter Arch de med d enfants, 1916 xix 1

[3] Sophian Abraham Specific Treatment of Infantile Paralysis, THE JOURNAL A M A, Aug 5, 1916, p 426

[4] Alfaro and Hitce Semana med 1915 xxii 211

One cannot believe that a few cubic centimeters of immune serum contain any great concentration of antibodies for the virus of poliomyelitis, and it would seem rational, therefore, to employ as large doses of the serum as possible, especially in intravenous and intramuscular injections, obviously intraspinal injection must be limited to a few cubic centimeters

In this series 50 c c was the largest dose, in most cases the dose was dependent on the quantity of serum on hand at the time Still larger doses are advisable, and should be repeated daily in severe cases

TABLE 3—EFFECT OF INTRASPINAL INJECTIONS OF IMMUNE SERUM ON THE LEUKOCYTES OF THE SPINAL FLUID

Case	Cells per C mm in Spinal Fluid Before First Intraspinal Injection	Cells per C mm in Spinal Fluid 24 hrs After First Intraspinal Injection	Cells per C mm in Spinal Fluid 24 hrs After Second Intraspinal Injection	Cells per C mm in Spinal Fluid 24 hrs After Third Intraspinal Injection
1	40	4 130	230	20
2	48	217		
3	47	175		
4	302	171	240	
6	84	165	110	
7	18	40		
9	178	149		
16	119	180	73	
5		64		20

In the majority of cases, following the first intraspinal injection there results an increase in the number of leukocytes in the spinal fluid, usually with increase in the proportion of polymorphonuclear cells The count of 4,130 in Case 1 contained 90 per cent polymorphonuclears, whereas the blood at the same time contained only 55 per cent polymorphonuclears Use of the serum, by any of the methods employed, apparently had no immediate effect on the leukocyte of the blood, which dropped gradually to normal within a few days

In three cases, following intravenous injection a fall in the cell content of the spinal fluid occurred, while in one case the number of cells was increased

A brief account of two typical cases may serve to illustrate the results in general

CASE 1—In a girl, aged 16 months the symptoms appeared five days previous to the first injection On entrance to the hospital there was paralysis of both arms and legs and paralysis of the external respiratory muscles, respirations were irregular, shallow and entirely diaphragmatic, dyspnea and cyanosis were present The temperature was 103 F

August 16, there were 15,700 leukocytes and 72 per cent polymorphonuclears The spinal fluid contained 40 leukocytes per cubic millimeter Five c c convalescent serum were injected intraspinally

August 17 there were 20 450 leukocytes and 55 per cent polymorphonuclears The spinal fluid contained 4,130 leukocytes per cubic millimeter, and 90 per cent polymorphonuclears Five c c convalescent serum were injected intraspinally and 8 c c intravenously

August 17, the spinal fluid contained 230 cells per cubic millimeter Five c c convalescent serum were injected intraspinally

August 19, the spinal fluid contained 20 cells per cubic millimeter

August 20, the spinal fluid contained 3 cells per cubic millimeter

On admission the prognosis seemed very bad, but following the second injection of serum there was marked general improvement ending in recovery

CASE 2—In a boy, aged 18 years the onset occurred August 16 with malaise headache and fever Paralysis was first noticed August 23 in the left leg and right arm The patient was admitted August 24, semicomatose and delirious, with rigidity, tenderness and pain in the neck, bilateral flaccid paralysis of arms and legs respirations superficial, acute retention of urine and temperature 101

August 24, there were 15,500 leukocytes and 74 per cent polymorphonuclears The spinal fluid contained 302 leukocytes per cubic millimeter, 92 per cent being small lymphocytes Five c c immune serum were injected intraspinally

August 25, there were 13,350 leukocytes and 70 per cent polymorphonuclears The spinal fluid contained 171 leukocytes per cubic millimeter, 88 per cent being small lymphocytes Eight c c serum were injected intraspinally and 8 c c intravenously

August 26, the patient s condition was much improved, the temperature normal, 12,250 leukocytes The spinal fluid contained 240 leukocytes per cubic millimeter, 26 per cent being polymorphonuclears Nine c c serum were injected intraspinally

August 27, the condition was much improved

August 28, the condition was not so good Twenty-five c c serum were injected intravenously, four hours later the patient appeared and felt much better Recovery followed

In none of the cases were ill effects noticed from the serum, or symptoms indicating the presence in the serum injected of lysin or agglutinin for the corpuscles of the recipient Precautionary tests for these substances should be carried out as a safeguard to the recipient

In the treatment of these cases, one was impressed with the marked improvement that followed within a few hours after injection of the serum, and particularly after intravenous injection, whether this result was due to specific antibodies in the injected serum or to the injection of so much serum only has not been determined To me the results of the use of immune serum seem sufficiently favorable to warrant its use until more satisfactory measures are obtained

Finally, in drawing conclusions as to the merits of the serum treatment in acute poliomyelitis, the possibility must not be overlooked that part at least of the improvement which occurs in patients receiving intraspinal injections, or in which spinal fluid has been withdrawn, may be due to the relief of increased intraspinal and intracerebral pressure

SUMMARY

1 The administration of immune serum in acute poliomyelitis is based on recognized principles of immunity

2 Because the lesions are not confined to the nervous system, and because the lesions therein consist essentially of perivascular infiltration, intravenous injection of serum appears to be a rational procedure, either alone or in combination with intraspinal injection

3 Intravenous injections of serum should if possible consist of doses of from 50 to 100 c c or more daily

4 Following intravenous or intramuscular injections of serum, spinal fluid should be withdrawn

5 Intraspinal injection of serum usually produces an increase in the number of the leukocytes with increase in the proportion of polymorphonuclear cells in the spinal fluid

6 No ill effects have followed the use of serum in this series, either by intravenous or intraspinal injection

7 In all cases after intravenous injection, and to a less degree after intraspinal injection, a noticeable

improvement usually occurred, which, unfortunately, however, in some cases was only transient

8 Early administration of the serum is urged, necessitating therefore an early diagnosis of the disease, in severe cases late administration of the serum has produced little if any noticeable influence on the course

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A REPORT OF ONE HUNDRED CONSECUTIVE CASES OF FIBROMYOMATA UTERI SUBJECTED TO OPERATION *

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PHILADELPHIA

The criticism has frequently been made that a collected series of fibromyomata uteri do not furnish accurate information on the life history of these tumors That position is well taken, as the conclusions drawn from such studies have greatly underestimated the danger of these tumors A consecutive series studied carefully, histologically, will demonstrate that the malignancies in the uterus and the degenerations in the tumor are decidedly more frequent than is generally believed

TABLE 1—MALIGNANCY AND DEGENERATIVE CHANGES IN TUMOR IN THIRTY ONE CASES

Calcareous infiltration	2
Carcinoma corporis uteri	7
Carcinoma cervicis uteri	2
Carcinoma of ovary with extension to uterus and sigmoid	1
Hyaline degeneration	11
Myxomatous degeneration	1
Necrosis	6
Sarcomatous	1
Total	31

The subject-matter of this paper is based on my first 100 consecutive cases of fibromyomata uteri subjected to operation While the number is not sufficient from which to draw definite conclusions, the material shows some interesting facts which will be given for what they are worth With the exception of one specimen removed in Canada and one which was lost before reaching the laboratory, all have been examined microscopically Every specimen in which the pathologist reported a malignancy and every specimen which was clinically suspected of malignancy, was subjected to another microscopist A better check on the pathologic diagnosis is the ultimate result, which will be given in another part of the paper

A persistent effort has been made to obtain a recent report in every case, but in a few this has been impossible In such cases, if the record showed six or more months after the operation that the patient was in good condition and free from all symptoms, it is considered a cure and is so recorded in this paper The date of the last report is recorded in Table 4 under heading "Remarks and Results " "No Report" means that all trace of the patient was lost shortly after being discharged from the hospital The recent reports were obtained by letters from the patients and in many cases by reports in person and from the family physicians, to whom I wish to express my deep appreciation for the prompt and satisfactory replies

Malignancy in the pelvic organs, and degenerative changes in the tumor were found as shown in Table 1 These took place in thirty-one patients, which is double the percentage usually reported

There were in all nine cases of carcinoma of the uterus, one case of carcinoma of the ovary with secondary involvement of the uterus, and one case of sarcoma, making 11 per cent of the cases complicated by a malignancy of the pelvic organs There was one patient who had a suspicious breast and a radical operation was performed a few days after the hysterectomy Histologic examination showed the tumor to be a carcinoma This tumor was no doubt an independent lesion Nevertheless, it makes 12 per cent of the patients who harbored a malignancy

There were two or three specimens which one pathologist diagnosed early malignancies, while the other claimed they were cellular myomas These have been recorded as benign tumors, but the patients will be kept under close observation In Case 78 and Case 89 *a malignancy* was *not suspected*, the diagnosis being made in the laboratory

The percentage of malignancies in this series is decidedly larger than usually reported, which shows the fallacy of drawing conclusions from a collected series In 3,561 collected cases reported by the writer[1] in 1908 the condition was present in 4 per cent In 337 cases operated on by Noble[2] malignancy was pres*ent in seventeen, or 5 per cent In the last 100 cases* he reported malignancy was found in 8 per cent Bland-Sutton[3] states that malignancy in the corpus uteri will be found in over 10 per cent of the cases in women past the age of 50 who submit to operation In a series of 500 consecutive cases submitted to operation he found among sixty-three women of 50 years and upward eight, or 12 7 per cent, who had cancer of the corporal endometrium, as well as fibroids Geist,[4] in a series of 250 cases of uterine and cervical myomas, found that twelve, or 4 8 per cent, showed sarcomatous changes Winter[5] believes that if myomas are examined systematically sarcoma will be found in about 4 per cent of all cases Freund[6] in 500 myoma cases found carcinoma in the uterus or ovary in 6 per cent, Kline[7] in 491 cases found malignancy in 7 7 per cent, and Mackenrodt[8] in 418 cases found malignancy in 7 7 per cent

It is well known that cancer is on the increase and surgeons are realizing more fully that all specimens should be examined microscopically, and as a result more laboratory work is being done For these reasons we can expect to find malignancy associated with fibromyomata uteri in a larger percentage of cases as time goes on The death rate from cancer in the United States registration area increased from 62 9 per 100,000 population in 1900 to 78 9 in 1913

In studying these degenerations it is important to know at what age they take place, as it has a decided bearing on whether we do conservative or radical surgery In this series, sixty-four patients were 40 years of age or upward In a series of 714 cases, including my own and those taken from the reports of the Kensington Hospital for Women from 1893 to 1909, inclusive, and from the papers of Cullingworth[9] and Scharleib,[10] in which the age of the patient was given, the degenerations took place, divided into decennial periods, as in Table 2

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* Because of lack of space, this article is abbreviated in The Journal The complete article appears in the Transactions of the Section and in the author s reprints

* Read before the Section on Obstetrics Gynecology and Abdominal Surgery at the Sixty Seventh Annual Session of the American Medical Association, Detroit, June 1916

[1] Tracy Stephen E Fibromyomata Uteri a Study of the Degenerations Complications and Associated Conditions of 3,561 Cases Surg Gynec and Obst 1908 vi 246

[2] Noble, Charles P Fibroid Tumors of the Uterus Jour Obst and Gynec. Brit Emp 1906 x 436

[3] Bland Sutton Sir John Fibroids of the Uterus, Their Pathology, Diagnosis and Treatment, London 1913

[4] Geist Samuel H A Contribution to the Histogenesis of Sarcomatous Change in Uterine Fibromyomata Am Jour Obst 1913 lxviii 1053

[5] Winter, Georg Die malignen und benignen Degenerationen der Uterusmymome Ztschr f Geburtsh u Gynak 1906 lvii 10

[6] Freund Quoted by Nordentoft Panner and Kjaergaard, abst, The Journal A M A Aug 22, 1914 p 714

[7] Kline Quoted by Nordentoft Panner and Kjaergaard, abstr, The Journal A M A Aug 22 1914 p 714

[8] Mackenrodt Jour Obst and Gynec Brit Emp 1914 xxvi 219

TABLE 2—DEGENERATIONS ACCORDING TO AGE OF PATIENT IN 204 CASES OF FIBROMYOMATA UTERI

Nature of Degeneration	Under	30 40	40 50	56 60	60 70	70-80	Total
Myxomatous degeneration		6	5				11
Necrosis of tumor	2	19	25	8	3		57
Cystic degeneration	1	5	6	1	3		16
Sarcomatous		1	4	4	2		11
Edema of tumor	2	11	12	5			30
Carcinoma of corpus uteri			3	6	2	1	1
Calcareous infiltraton		1	2	3	4		10
Carcinoma cervicis uteri		2	3	1			6
Hyaline degeneration	3	7	24	3			37
Hyaline degeneration and necrosis				2			2
Hyaline degeneration and edema			1				1
Myxomatous degeneration and calcareous infiltration			1				1
Calcareous infiltration and necrosis		1					1
Fatty degeneration			1				1
Inflammation		1					1
Carcinoma					1		1
Necrotic carcinoma			1				1
Malignant change			1				1
Adenocarcinomatous change		1					1
Epithelial degeneration					1		1
Necrotic or sarcomatous degeneration				1			1
Calcareous infiltration, necrosis adenocarcinoma corporis uteri				1			1
Total	8	55	89	35	16	1	204

The age at which the degeneration took place in the 714 cases, varied from 23 years to 72 years Of 204 cases in which degeneration took place, 141, or 69 per cent, occurred after the age of 40 Of thirty-five cases of malignancy, thirty-one, or 88 57 per cent, took place in women of 40 years and upward In this series of 100 cases degenerations took place in thirty-one Of these, in twenty-six, or 84 per cent, the degeneration took place in women of 40 years or upward In 11 cases of malignancy of the pelvic organs ten, or 90 9 per cent, occurred in women past the age of 40 years, another evidence of discrepancy in a collected series

Abdominopelvic lesion associated with the fibromyomas were as is shown in Table 3

TABLE 3—ABDOMINOPELVIC LESIONS ASSOCIATED WITH FIBROMYOMA

Lesion	No Cases
Appendicitis	30
Gestation	2
Gestation ectopic	3
Cholelithiasis	1
Hernia incisional	1
Hernia inguinal	1
Hernia umbilical	1
Hydrosalpinx	2
Ovarian cyst	4
Ovarian cyst intraligamentous	3
Ovarian fibroma	1
Pyosalpinx	3
Prolapsus uteri	4
Retroversus uteri	2
Salpingitis	17
	75

In only nineteen of the 100 cases were there no associate lesions of the abdominal or pelvic organs and no change in the tumors or uterus In fifty-six cases there were surgical lesions in the abdomen or pelvis in addition to the fibromyomas

The thirty cases of appendicitis do not indicate that the appendixes were removed simply as a routine, but that they showed some clinical evidence of a pathologic character

The two cases of gestation subjected to operation were deliberately performed In one case the tumor caused the uterus to rotate to the extent that it caused severe pain, from which the patient demanded relief In the other case the patient was seen in consultation at the fourth month of the first gestation The pelvis was filled with fibromyomas, which did not rise as the uterus enlarged The pregnancy was allowed to continue to nearly term, when a cesarean section was performed and the uterus removed

Of the 100 patients, sixty-three were married, eleven were widowed and twenty-six were single Of the seventy-four who were or had been married, fifty-four, or 72 per cent, had borne children

The surgical procedures carried out in these cases consisted of supravaginal hysterectomies sixty-four, *panabdominal hysterectomies twenty*, *vaginal hysterectomy* one, abdominal myomectomies nine, vaginal myomectomies six In every case of known malignancy, suspected malignancy and extensive laceration of the cervix, a panhysterectomy was done, unless there was some contraindication Besides the operative procedures enumerated, several of the patients had plastic work at the time the tumors were removed Case 72 had a plastic operation, a shortening of the round ligament and an appendicectomy in addition to the myomectomy

The primary mortality was 2 per cent Case 23, that of a pale, weak patient, did well the first four days, when her special nurse gave a bath on a winter's day with the windows wide open, she promptly developed a double pneumonia and died on the eighth day In Case 66 the patient developed renal insufficiency and died fifty-two days after operation She had recovered from the operation, but remained at the hospital for medical treatment, as she died in the institution the fatality is included in the series

In reviewing the results of the cases subjected to hysterectomy one of the most important factors from the standpoint of the patient is the amount of suffering from the *artificial menopause* The patients have been questioned closely on these symptoms and every effort has been made to classify them accurately The degree of the menopausic symptoms have been divided into five classes as follows no symptoms, very mild, mild, moderately severe, and marked

Of the patients subjected to hysterectomy, in seventy-two the menstrual function was still active Of these, in twelve one or both ovaries were allowed to remain, in six both ovaries, in four the right, in *two the left, five are dead, seven cannot be traced,* which leaves forty-eight traced patients who had both ovaries removed Of these forty-eight cases, nine, or 18 7 per cent, had no menopausic symptoms, in eight, or 16 8 per cent, the symptoms were very mild, in twenty, or 41 6 per cent, the symptoms were mild, in 7 or 14 5 per cent, the symptoms were moderately severe, and in four, or 8 3 per cent, the symptoms were marked In 77 per cent of the cases the disturbance as a result of the artificial menopause varied from no symptoms to mild discomfort

Of the twelve patients in whom one or both ovaries were allowed to remain, ten have been traced In five, or 50 per cent, there were no menopausic symptoms, in two, or 20 per cent, the symptoms were very mild, in one, or 10 per cent, the symptoms were moderately severe, while in two, or 20 per cent, the symptoms were marked These two patients were pronounced neurasthenics before the operation, and after the operation they complained greatly of the menopausic symptoms Their physical condition is good and they have been cured of all symptoms caused by the tumors They would no doubt have complained to the same extent had they gone through the natural menopause

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[9] Cullingworth C J Jour Obst. and Gynec Brit Emp 1902 i 5
[10] Scharleib M Jour Obst and Gynec Brit Emp 1902 ii 323

Of the patients in whom one or both ovaries were allowed to remain, 50 per cent had no symptoms of the menopause, as compared with 18 7 per cent of the women who had the ovaries removed On the other hand, of the women who had the ovaries removed, the menopausic symptoms were absent or mild in 77 per cent, as compared with 70 per cent in women who had one or both ovaries left in When doing a hysterectomy in a patient whose menstrual function is active, if an ovary is perfectly normal it should probably be allowed to remain, but should be so placed and anchored that it cannot lie in the bottom of the pelvis and cause pain On account of the liability of adhesions about and pressure by the sigmoid, I prefer to leave the right ovary Unless an ovary is absolutely normal it should not be allowed to remain

Several of the patients with menopausic symptoms were made comfortable by the administration of corpus luteum Unfortunately, the records on the use of this product are not sufficiently complete to give figures or percentages

In patients past the age of 40 years, I believe it makes but little difference whether the ovaries are allowed to remain or are removed, as the menopause will soon take place and the majority of women do not have any serious trouble

In this series there has been no reason to regret that an ovary has been allowed to remain In none of the traced cases has it been necessary to do a second operation for the removal of these organs

In the series there were fifteen myomectomies, nine abdominal and six vaginal Of these, eight of the patients were married, two were widowed and five were single

Of the nine abdominal myomectomies, eight of the patients were of the child-bearing period Of the nine patients, seven have been traced, while two could not be located Of the seven heard from, six were of the child-bearing age, three of the six were either single or widowed Of the three who were married, there has been one pregnancy, which terminated in a miscarriage The family physician stated he believed the miscarriage had been induced One of the single women has married since the operation, but has not conceived[11]

Of the six vaginal myomectomies, five have been heard from Two of these patients are past the child-bearing period Of the three patients in whom gestation is possible, one is still single, and of the others there have been no pregnancies

One patient on whom an abdominal myomectomy was performed continued to have metrorrhagia after the operation She has been cured by Roentgen-ray treatment, one of the few indications for roentgenotherapy

In Case 100, the patient came for the cure of a prolapse of the cervical stump with a complete eversion of the vagina, a cystocele and rectocele She had had a supravaginal hysterectomy by another surgeon four or five years previously A fibromyoma the size of a large walnut was removed from the posterior, upper right corner of the cervix and a plastic operation cured the prolapse and eversion

In spite of every effort to trace these patients, eleven could not be located, which leaves eighty-nine patients accounted for Of these, eleven are dead, the cause of death being as follows

Miss C (Case 5), died of acute mania one and one half years after the operation

Mrs McG (Case 15), advanced carcinoma of the uterus, died of a recurrence in about three years

Mrs C (Case 19), advanced sarcomatous degeneration, died of a recurrence in four months

Mrs M (Case 22), carcinoma of corpus, died of uremia about two and one half years after operation Family physician reported there was no evidence of a recurrence

Mrs M (Case 23), died of a double pneumonia the eighth day after operation Described under primary mortality

Mrs H (Case 27), carcinoma of corpus, which had perforated the uterus and extended through the broad ligament to the side of the pelvis, died of recurrence in one year She was prepared for operation about a year earlier, but lost her nerve and went home She also lost her opportune time, as there was then no evidence of involvement beyond the uterus

Mrs C (Case 34), a well developed carcinoma of cervix Had a considerable recurrence when seen last at the end of a year (1911) and is considered long since dead

Mrs D (Case 41), died of cardiovascular renal disease eight months after operation This patient had a pronounced heart lesion and on this account had been refused operation at another hospital She had long suffered with metrorrhagia and for two years preceding operation had been confined to bed most of the time Her blood pressure was low and there was no evidence of renal degeneration After operation she developed a phlebitis beginning at the base of the skull, extending down the neck and the left upper extremity She recovered from this and enjoyed good health a few months, when the blood pressure began to mount, the urine contained albumin and casts, and there was bleeding from all the mucous membranes

Mrs S (Case 64), malignant ovarian cyst with advanced secondary involvement of uterus, broad ligaments and sigmoid, died of recurrence in eleven months

Mrs B (Case 66), carcinoma of corpus, died of uremia fifty-two days after operation Described under primary mortality

Mrs Z (Case 84), advanced carcinoma of corpus, which had extended through the uterine wall, had a recurrence, or what would be more accurate an extension of the process, and died suddenly five months after operation

Of the eleven patients with malignancy, six have died of recurrence, one died of uremia fifty-two days after operation, another died of uremia with no evidence of recurrence two and one half years after operation Three are alive and well one (Case 44) four years and nine months after operation, one (Case 78) two years, and one (Case 89) seventeen months

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[11] His patient came for examination since this paper was presented and is now (July 29 1916) over five months pregnant

With the exception of Case 78 and Case 89, the malignancy was well advanced and in several cases it was a question if the result would be worth the effort With the exception of Case 19, sarcomatous degeneration, in which the operation was probably of no use whatever, life was prolonged and the hemorrhage and offensive discharge were eliminated, which made the tragedy somewhat easier for the patient and the family

Of the seventy-eight patients alive and traced, we have the following results One patient, while cured of the pelvic lesions had an infection of the incision with a resulting hernia One patient after a plastic operation, a myomectomy, an appendicectomy and a shortening of the round ligaments, continued to have metrorrhagia, which was controlled by Roentgen-ray treatment, and is not considered a surgical cure The combination of treatments was ideal There was no excuse for a hysterectomy, which would have controlled the bleeding, as the tumors were small and the patient comparatively young On the other hand, the Roentgen rays would not have cured the lacerations, the displacement, or the chronic appendicitis One patient is well except for so-called chronic rheumatism One patient, a marked neurasthenic, has a cystitis and claims she is no better than when bedridden with a pelvis and lower abdomen filled with a fibromyoma and a bilateral femoral phlebitis from pressure The remaining seventy-four are well and are enjoying good health To these should be added, as cured of the pelvic trouble, the one who has rheumatism, making a total of seventy-five, or 96 per cent, cured From the seventy-five, three who are now in good health, should be held under advisement, as they had a malignancy of the uterus associated with the fibromyomas

In Case 68 the glycosuria disappeared a few weeks after operation

The one thing that is worthy of especial emphasis in this series is the percentage of malignancies and with two exceptions *they were well advanced cases* The only way we can hope to improve our results in fibromyomas complicated by a malignancy is to educate the profession and the public to the danger of these tumors Fibromyomas are not innocent tumors which are cured by the menopause On the contrary, they are progressive, insidious neoplasms, whose danger increases with advancing age of the patient, 87 5 per cent of the malignancies and the degenerations in the tumors in this series were in women over 40 years old Why any man, and especially a surgeon, will tell a woman past the age of 40 who has a fibromyoma with metrorrhagia not to worry, that she will be cured by the menopause, is beyond my comprehension This may explain why some men have so few malignancies associated with their cases of fibromyomas He who gives such advice is responsible if an incurable malignancy develops while the patient is serenely waiting a menopausic cure

I trust there is no surgeon who will deny that there is an intimate relation between fibromyomas and carcinoma of the corpus Any series of cases carefully studied will show that the vast majority of malignancies are in the corpus, while the majority of malignancies of the uterus which do not contain fibromyomas are in the cervix

While time will not permit a discussion of other methods of treatment, I cannot refrain from asking my radiotherapy friends, who talk about the control of bleeding as being a cure, what they would hope to accomplish in the way of relieving these patients of their abdominal and pelvic symptoms by the Roentgen-ray treatment, when there were only nineteen patients who had neither a malignancy of the pelvic organs, a degeneration of the tumor or an associate abdominal or pelvic lesion While I will concede there is a certain small percentage of cases, as outlined by the writer[12] in a paper before the state medical society in 1914 that should receive roentgenotherapy, I do maintain that with a few exceptions all fibromyomata uteri which produce symptoms should receive early surgical treatment

OPERATIVE TREATMENT OF FIBROMYOMATOUS UTERINE TUMORS *

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General interest in the question of the treatment of myoma of the uterus has been rekindled by the enthusiastic claims of advocates of the Roentgen ray and radium treatments Surgery has fought and won against the old ideas of the harmlessness of the majority of these uterine growths, showing that in many cases they take on activity after a period of quiescence that they undergo malignant degeneration, that they may produce harmful pelvic and abdominal lesions, that they predispose to carcinoma of the uterus, that they produce a variety of harmful pressure effects and in short that any given series of women who are the subjects of these growths will in time show a large percentage who suffer from one or more of a great variety of complications that are more or less disabling or dangerous to life

We have fought to a finish the idea that if a woman could be tided along to the menopause, it could be expected that the fibroids would then shrink and cease from troubling

We have seen the Roentgen ray advocated and have noted some success in its employment for the control of the associated metrorrhagia of fibroid tumors of the uterus We have had authenticated cases, not only of symptomatic improvement, but also of material diminution in size of tumors so treated We all hoped for a time that an absolutely safe and specific remedial agency was in our possession Now sufficient time has elapsed for us to conclude that many failures are to be expected with the Roentgen-ray treatment, that a certain amount of positive harm can come from it and that a vast amount of harm can result in this form of delay of radical treatment in cases where that alone offers any prospect of cure

Now we are confronted by radium, for which more extended claims are made, and we are asked to believe that *it will not only control* the symptoms, but also cause a disappearance of the growth in many instances It is therefore well to review our results with the operative treatment, in order that we may see whether the profession is justified in running after this new prophet, which to our mind is about to prove itself as false as those which have preceded

It is obvious that a considerable time must elapse before the radium treatment can be stamped with the final verdict of history A patient treated by radium, even though symptomatically improved, still has her fibroid, for I do not take seriously the claim that such tumors disappear under the influence of the radiations I have operated on too many patients that have failed to be cured by radium to allow me to believe in such marvelous and specific efficacy I am willing to grant that well-attested cases exist in which shrinkage of the growth has followed this form of treatment I admit that a certain type of metrorrhagia can be controlled I am not ignorant of the fact that more or less obscure relations exist between ovarian function and pelvic congestion, and therefore that in this way by influencing the blood supply of the uterus and its contained tumors it may be possible to check hemorrhage, arrest growth, and perhaps in a few favorable cases actually to reduce the size of this neoplasm

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[12] Tracy Stephen E Treatment of Fibromyomata Uteri Whether Surgery or Radiotherapy Pennsylvania Med Jour 1915 xviii 353

* Read before the Section on Obstetrics Gynecology and Abdominal Surgery at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

I am willing to grant even that there is a certain direct effect of the rays on the tumors themselves though unfortunately this is not a specific effect and therefore associated with similar changes in other tissues in which they are undesirable In short, it cannot be denied, if anyone had the disposition to do so, that the sum total of the effects of both the Roentgen ray and radium on tumors of this group at times result in changes that are beneficial to certain patients It is quite a difficult thing to say that these facts point to radiation as the treatment of choice or even to conclude that it is safe to try it first, before recommending the operative method The majority of cases of appendicitis will recover from the attack under proper medical treatment, but that has not prevented the profession from taking the firm and uncompromising stand that appendicitis is a surgical disease, in which temporizing is to be condemned as unsafe The Roentgen ray and radium have a pronounced influence over malignant growths, and if applied early enough doubtless will dissipate certain cases of carcinoma and sarcoma, but we nevertheless consider it malpractice to employ these measures in any case amenable to excision The only difference in the failure of Roentgen rays and radium in the case of malignant disease and their failure in dealing with fibroids is in the fact that in the former case the inevitable fatalities at once drummed the treatment out of court, while in the latter the relatively benign character of the condition and the slow development of its morbidity and mortality from complications makes actual proof of the insufficiency of the treatment a matter of time and comparative statistics Yet I maintain that it is not necessary to wait for these slower processes if we use only what knowledge has already accumulated

In my opinion we are now justified in asserting that both the Roentgen ray and radium have failed to demonstrate specific power over fibroid growths and therefore must be placed in the category of symptomatic forms of treatment which accomplish good results in occasional cases, like the use of corrosive plaster in epithelioma, but when used as a measure of general applicability, will do great harm in causing delay of the radical treatment and exciting false hopes of nonoperative cure that may deprive many of proper treatment In all cases the treatment is expensive and often tedious It does not safeguard against future trouble There is no reason to believe that it can abolish the well-attested toxic effect of certain myomas on the heart and possibly other organs Bearing in mind also the curious relationship between various radiations and malignant disease, one finds it is impossible to dismiss subsequent hazard of carcinoma or sarcoma in the pelvic tissues Time only will settle this point and in any event the abnormal pelvic organs can be expected to show as time goes on a fair percentage of malignant conditions, whether or not they are the result of ray treatment or entirely independent of it We can conclude that operation, by which the patient is rid completely and finally of the growth or growths and associated pathology, remains the ideal treatment It is not time for the profession to take a stand and condemn the excessive zeal of those who would displace operation or relegate it to a last resort, and instead put radium in its proper place as a symptomatic treatment to be employed only when operation is contraindicated?

The great argument in the use of the Roentgen ray or radium is the absence of immediate mortality But the question of mortality must be faced in any operation There would be no operation of any kind if a chance of mortality were the predominant factor If radium cannot fill the place of operations, and we have seen that this is the case, it is proper to assess the dangers of operation in order to determine whether they are prohibitive of ideal treatment

In a previous series of 250 operations[1] my mortality figures amounted to 9 13 per cent, although the last operations proceeded with but three deaths (2 3 per cent) In this series of 750 operative cases, covering a period of eleven years (from 1905 to 1915, inclusive), there were only thirteen deaths, reducing the mortality to 1 73 per cent, and it gives me great satisfaction to be able to state that the last 100 of these operations passed off without a single fatality

The results of radium would need to be marvelous, indeed, if it is to vie as a symptomatic treatment with an ideal curative treatment that shows so small a mortality

Furthermore, it should be noted that a large number of these cases were such as could scarcely be undertaken with any hope of success by even the extreme radium enthusiast Many possessed huge fibroids which had contracted extensive adhesions Some were parasitic on the omentum or intestines Numerous degenerative changes were present Of the last 513 cases, 111 showed hyaline degeneration In twenty-six it was either hemorrhagic, necrotic or calcareous or a combination of these Carcinoma was associated in eight cases Tuberculosis was noted in one case Pyosalpinx was found fourteen times In two cases tuberculous salpingitis was present Ovarian cysts were found in forty-eight cases and intraligamentary cysts in seven Of the ovarian cysts eight were dermoids Two showed intracystic papillomas and in two early malignant changes were found Sarcoma of the ovary was observed once It will be noted that the percentage of associated malignant disease alone was larger than the percentage of mortality What should we say of any form of treatment that tends toward delay?

Note, moreover, that these malignant conditions were actually present at the time of operation In view of the admitted tendency for the development of malignant changes in such conditions with any treatment other than the operative, a further toll from cancer or sarcoma will be exacted at a later date This is true entirely irrespective of the question as to whether the ray treatment actually predisposes toward malignant changes though several cases are already on record in which this seemed likely Since all will admit that no one can diagnosticate these forms of malignancy early enough to cure more than a small percentage, is it not true that the effect of symptomatic treatment will be to raise the mortality from cancer and sarcoma, a step backward toward the dark ages?

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[1] Deaver, John B Am Jour Obst 1905, lii, 858

A considerable number of patients were operated on at the same time for other conditions, such as hernia, lacerations of the perineum, hemorrhoids, cholelithiasis, cholecystitis and appendicitis The appendix was removed 513 times About forty-eight were approximately normal, four showed acute suppuration The remainder presented chronic interstitial or obliterative processes The net gain in the correction of these conditions is an additional argument for operation

The postoperative history was uneventful in the great majority of cases A number of cases of pneumonia, pleurisy and phlebitis, ten in all, soon yielded to treatment and the recuperative powers and were followed by uneventful recovery In fifteen instances the wound broke down, twice as a result of violent coughing Ureterovaginal fistula and vesicovaginal fistula each occurred twice after panhysterectomy, requiring secondary operations One patient developed both fecal and vesicovaginal fistula and two had fecal fistulas alone One patient had postoperative parotitis One patient, on the third day, began to vomit copiously, with signs of acute dilatation of the stomach, but was relieved by the stomach tube Convalescence was prolonged in one case by cholecystitis, in another by a profuse purulent discharge and in a third by painful defecation As a rule recovery was established in ten days to two weeks and the patients dismissed in good condition to continue their convalescence

Operative deaths are in the majority of instances due to infection In this series seven died of peritonitis Paresis of the bowel, probably of toxic origin, was responsible for one death Pneumonia, myocarditis, asthenia, cardiac failure and shock were given as the causes of the fatal termination in the remaining five cases

Against this list of mortality and complications we cannot allow the advocates of radium to urge their procedure as possessing no mortality Surgery is the only cure of malignant disease, and as mentioned above, the malignant degenerations found in this series actually exceeded the mortality percentage Therefore any treatment other than operation should be credited with this mortality since it deprives the patient of his only hope of cure Moreover, it is certain that these damaged organs if left in situ would inevitably in a large percentage of cases become the seat of malignant disease The prevention of such changes by removal actually places a balance to the credit of operation, while it further condemns so-called conservative treatment

Morbidity also will be a much more marked feature of any palliative treatment than it is of radical measures which remove the root of the troubles Shall we not acknowledge frankly, therefore, that radium has failed as the treatment of choice for fibroids and associated conditions and return to the improvement of our most effective arm?

The operation of choice is supravaginal amputation of the uterus, because it is simpler and less liable to infection and other complications than removal of the entire uterus An exception should be made when the cervix is distinctly abnormal by reason of lacerations, ulceration or inflammatory conditions In this case the whole organ should be removed Ovaries should always be left unless diseased In younger women one ovary, or a portion of it, should be left, unless such marked inflammation or neoplastic changes are present as to make it dangerous to do so In women beyond 40 more latitude in removal of the ovaries is justifiable, but they should never be needlessly sacrificed

It is my practice to fix the round ligaments and the stump of the upper portion of the broad ligaments into the cut surface of the cervix, or, in the case of panhysterectomy, to the vagina on each side This aids in restoring the support of the pelvic floor and distributes more equally the intra-abdominal pressure on the pelvic structures, causing less liability to bladder and rectal symptoms

Myomectomy I rarely advise Only occasionally does one see a case to which it is adapted Myomas are usually multiple and when single are apt to be so large at the time of operation as to render hopeless any attempt to save a functionally sound uterus Occasionally, in the case of young women, it is justifiable, but it is well to remember that it may be a more complicated and dangerous operation than removal of the uterus

I must mention the service that will at times be rendered by the operation of hysterotomy Occasionally it is impossible to distinguish between a pregnant uterus and one symmetrically enlarged by a myoma In such cases an incision will promptly clear the diagnosis and prevent the error of either removing a normal pregnant uterus or leaving behind one which is merely the seat of a deceptive tumor It is at times possible also by this method to expose a small bleeding mucous polyp or submucous myoma and save the uterus Unsuspected malignant disease of the interior of the uterus also may be detected in this way and indicate a more radical procedure than would otherwise be carried out

In conclusion let me say that the operation for the case of fibroid tumor of the uterus has been to me one of the most satisfactory in all surgery If performed on operable patients at a timely season the mortality is exceedingly low, the results almost uniformly good When cure is indicated symptomatic treatment has no place

In the last 750 operations there were sixty-eight supravaginal amputations of the uterus without removal of the tubes and ovaries, 325 supravaginal amputations of the uterus with removal of both tubes and ovaries, and 145 supravaginal amputations with partial removal of the tubes and ovaries There were ninety-nine complete abdominal hysterectomies, twenty vaginal hysterectomies, and ninety-three abdominal myomectomies

1634 Walnut Street

Sour Grass Soup and Ptomain Poisoning—A recent investigation of several cases of illness occurring in the East Side of New York and thought to be due to ptomain poisoning were found to be due to sour grass soup This soup is prepared from 'qchav" or "szchav' leaves, commonly known as sour grass, a species of sorrel It is rich in oxalic acid salts, an analysis in the chemical laboratory of the department of health showing as much as 2 grains of oxalic acid in an ounce of leaves, and double that in the stems This investigation shows that sour grass soup is a popular dish on the East Side Chemical analysis of the soup has shown about 10 grains of oxalic acid to a pint of soup

RECENT PROGRESS IN THE TREATMENT OF UTERINE CANCER*

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The most worthy methods of treating uterine cancer are the radical abdominal operation of Wertheim, the extended vaginal operation of Schauta, Percy's operation for inoperable carcinoma, and radiotherapy with radium or Roentgen ray, or a combination of surgery and radiotherapy

For a proper estimate of the value of these procedures it is highly essential that the statistical method or formula of Winter[1] be used, for in this manner only can a proper idea of each be determined By this formula, which is based on the given number of patients observed, we determine the number or percentage who are alive five years after treatment This is essential, because the operability, the primary mortality, permanent cures, and the absolute cures vary with each method

There are two factors which contribute to the belief that cancer of the uterus may be cured by means other than surgical, first, the tendency of uterine cancer to remain localized in the pelvic cavity, metastasis being manifest only in the later stages of the disease, and second, the difference in malignancy or relative benignancy of certain types of uterine cancer Thus we find that cancer of the fundus uteri (adenocarcinoma) is the least malignant of all cancers affecting that organ, and that cancer of the cervical canal or cervix proper (cylindric-cell carcinoma) is the most malignant Cancer of the portio vaginalis (squamous-cell carcinoma) stands between the first two types in point of malignancy It is for these reasons that the results attained from any form of treatment for cancer of the cervical canal are as a rule unfavorable Cancer of the portio vaginalis and corpus carcinoma give a more favorable prognosis

It is difficult or almost impossible to obtain accurate data regarding results from the various treatments in each of the above types of uterine cancer As a rule cases are reported simply as cancer of the uterus, no distinction being made as to kind or type When no such distinction is made, the reports always appear more favorable Every surgeon of experience can recall cases of inoperable cervical cancer which he has thoroughly cauterized and curetted, and the patient remained free from recurrences, in some instances, for years These are, as a rule, the relatively benign forms of squamous-cell carcinoma of the portio vaginalis, the type of uterine cervical cancer which helps to increase the number of cured patients after any form of treatment

TABLE 1—RADICAL ABDOMINAL OPERATIONS FOR CANCER OF THE CERVIX

By Whom Reported	Where Reported	No of Patients Observed	Operability per Cent	No of Operations	Primary Mortality	Cures after Five Years	Absolute Cures per Cent
Mayer A (Doederline Clinic)	Ueber das Uterus Karcinom und die Ergebnisse seiner Behandlung mit total Extirpation nach Wertheim Monatschr f Geburtsh u Gynak 1911 xxxiii 701	211	56	118	38	34	16 7
Bovee I W	Statistics of Radical Operation for Cancer of Cervix Uteri Am Jour Obst, 1912, v, 66 380			36	9	7	
Noble G H	(Atlanta)			25	1	13	
Kelly H A	Bull Johns Hopkins Hosp 1913, xxiv, 372	188		82	22	18	16 5
Faure J L (Paris)	Traitement du cancer du col de l'uterus par l hysterectomie abdominale Bull et mém Soc de chir de Paris 1913 xxxix 1061			24	2	17	
Clark	The Radical Operation for Cancer of the Uterus Surg Gynec and Obst, 1913 xvi 255			36	3	4	
Waegeli	Le traitement opératoire du cancer utérin a la clinique gynécologique de l Université de Genève Rev de gynéc 1914 xxiii 29	323	26 89	87	13	7	16 1
Wilson	The Results of Abdominal Operative Treatment of Cancer of the Uterus Med Press and Circular 1914 xcviii 302	98	22 5	32	9	10	10
Prochownick L	Behandlung und Statistik des Gebarmutterkrebses Zentralbl f Gynak 1915, xxxix 627	323		123	[illegible]	16	
Peterson R	Tr Am Gynec Soc 1916			40	[illegible]	18	
Wertheim	International Congress of Medicine London 1913 Section 8 Obstetrics p 97			566	131 or 23 11%	144 or 25 44%	
		1 501	50	714	119 16 6%	186 53 5%	29
Combined		2 644	Average 38 85	1 280	250 or 19 53%	330 or 25%	Aver for 6 opera or 16 5

Although complete data for a computation of the relative value of each method of treatment cannot be had at this time, sufficient data are at hand to show the results of the surgical treatment, and to give us a fair estimate of the value of the others

Regarding the radical operation as advocated by Wertheim, Ries, Werder, and others, the author[2] in 1911 published a collective abstract of the results obtained in 2,765 such operations The figures for this operation at that time were an operability of 65 17 per cent, and a primary mortality of 19 94 per cent The latest report obtainable from the clinic of Wertheim[3] in Vienna is that given by him at the International Congress in London, in 1913 In this report Wertheim gives his operability as 50 per cent, with a primary mortality of 16 6 per cent, definite cures as regards the number of radical operations, 42 5 per cent , definite cures as regards survivors of the radical operation, 53 3 per cent The absolute cure of all uterine cancer patients observed, in all 1,501, was 20 per cent On account of the European war, complete reports from all the continental clinics are not available

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Sixty Seventh Annual Session of the American Medical Association Detroit, June 1916

[1] Winter Vorschlage zur Einigung uber eine brauchbare Karzinom statistic Zentralbl f Gynak February 1908 xxxii 169 Ueber die Prinzipien der Carzinomstatistic Zentralbl f Gynak 1902 xxvi 81 Noch einmal die Carzinomstatistic ibid 545

[2] Jacobson J H The Results Attained by the Radical Abdominal Operation for Carcinoma of the Uterus The Journal A M A, Jan 14 1911 p 96

[3] Wertheim International Congress of Medicine London, 1913, Section 8 Obstetrics p 97

In Table 1 is given a list of reports for the radical operation performed for cancer of the cervix by other operators than Wertheim, with Wertheim's results appended for comparison Table 2 gives the results from the same operation, in cases in which the type of cancer is not stated It will be noted that the most reliable figures are those pertaining to the number of operations performed, the primary mortality, and the permanent cures after five years In all, there are 1,778 operations, with a primary mortality of 19 68 per cent , and permanent cures after five years of 23 46 per cent Approximately one out of every four women operated on by the radical abdominal method will pass the five year limit

The Schauta[4] extended vaginal operation seems to have its special indication, giving results in the hands of the most experienced which approximate those obtained from the radical abdominal operation In this country the operation has never been extensively employed, although it is particularly indicated in obese women in whom the radical method is difficult

TABLE 2—TYPE OF UTERINE CANCER NOT CLASSIFIED

By Whom Reported	Where Reported	No of Patients Observed	Operability per Cent	No of Operations	Primary Mortality	Cures after Five Years	Absolute Cures per Cent
Cobb Farrar	Boston Med and Surg Jour 1913 clxv 85	470	36 1	55	12	7	
Taussig F	Am Jour Obst 1912 lxvi 596		50	60	18	14	
Cullen T S	Am Jour Obst 1912 lxvi 596			49	7	7	
Sampson J A	The Radical Operation for Cervical Cancer New York State Med Jour 116 xvi 62			25	5	4	
Busse W U (Kroenig Clinic)	Dauerresultate bei dem Operation des Uteruskarcinoma nach den abdominalen methoden Monatsch f Geburtsh 1912 xxxv 35	79	78 95	59	15	19	25 53
Peto E	Heilung des Gebarmutterkrebses mittels des Wertheimschen Operation Virchows Arch f path Anat 1913 ccxviii 470		63	100	14	10	10
Hoffmeier M	Zur Operation Behandlung die Carcinoma Colli Uteri Ztschr f Geburtsh u Gynak 1911 lxix 543			80	18	32	
Bumm E	Ztschr f Krebsforschung 1910 x 105	100	60	60	12	24	
				498 1 280	101 or 20 3% 250	87 or 17 47% 330	
Table 1				1 778	351 or 19 68%	417 or 23 46%	

Thaler[5] recently reported the results from the Schauta clinic up to the year 1915, out of 1,305 patients observed, there were 654 operations, with permanent cures after five years of 133, or 17 4 per cent The absolute cure of all cases observed was 10 per cent Hofmeier[6] reports ninety-one such operations, with eleven deaths, and eighteen five-year cures, while Prochownick[7] in 200 operations had twenty-two deaths, and twenty-two five-year cures The totals for these reports are 945 operations, with 173, or 18 31 per cent, alive after five years The operability as given by Schauta[8] averages 58 1 per cent

From an operative standpoint recurrences following surgical operations for cancer of the uterus have heretofore been considered hopeless, but Zweifel[9] from the Jena clinic in 1914 records twenty-three cases of operation for recurrence Thirty-one operations were performed on twenty women Of these patients 30 per cent are alive and free from recurrence after seven and one-half years On the basis of this study Zweifel advocates, and properly so, a clinical control of all patients operated on for cancer, especially during the first two years The necessity for such supervision has been emphasized by Wertheim, and also by Percy in this country

Regarding the operation of Percy[10] now so widely employed for the treatment of inoperable forms of cancer, the method has much to recommend it The slow dissemination of a coagulating degree of heat through the carcinomatous mass is a new principle in the treatment of cancer With no other known method can the fixed pelvic structures be so loosened, and mobilized The tissues following the application of a low degree of heat are literally coagulated and dissolved The method has an operability of 90 per cent , but so far nothing can be said of the primary mortality, the permanent cures or absolute cures The primary mortality is estimated at 50 per cent , the permanent cures after five years cannot be spoken of at this time, as no one has thus far published a large enough series of cases to form any accurate estimate of the actual curability by this procedure

It is highly probable that were this method used in earlier cases of cancer of the uterus, the results would be more favorable In a consideration of cautery and heat operations, one must not forget that Mackenrodt[11] developed and used a method which he designated "ignextirpation," and after a wide experience with it he abandoned the method for the radical abdominal operation The Percy operation when properly performed is the best means at our command for the treatment of inoperable or borderline cases of cancer of the uterus

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[4] Schauta Die erweiterte vaginale total Extirpation des Uterus bei Kollemkarzinomen Monograph Joseph Safar Vienna 1908

[5] Thaler H Zur erweiterten vaginalen Karzinomoperation Zentralbl f Gynak 1915 xxxix No 41

[6] Hofmeier M Zur Operativ Behandlung die Carcinoma Colli Uteri Ztschr f Geburtsh u Gynak 1911 lxix 453

[7] Prochownick, L Behandlung und Statistik des Gebarmutter krebses Zentralbl f Gynak 1915 xxxix 627

[8] Schauta Monatschr f Geburtsh u Gynak 1912 xxxvi 202 Die erweiterte vaginale operation bei Carzinoma Colli Uteri auf Grund zehnjahreger Erfahrung ibid 1911 xxxiii 680

[9] Zweifel Erwin Dauere Folge nach Rezidivoperationem bei Uterus Carcinomen Arch f Gynak 1914 cii 411

[10] Percy J F Heat in the Treatment of Carcinoma of the Uterus Surg , Gynec and Obst January 1916 p 77

[11] Mackenrodt Ueber die Igniextirpation bei Scheidengebarmutter krebs Verhandl d Gesellsch f Geburtsh u Gynak Ztschr f Geburtsh u Gynak 1896 xxxiv 130

The rapidly increasing literature on radiotherapy in the treatment of uterine cancer demonstrates that in radium and the Roentgen ray we now have powerful agents which have a favorable or curative influence on the disease The recent articles by Boggs,[12] Case,[13] Miller,[14] Kelly and Burnam,[15] and von Franque[16] reveal the fact that a new era is at hand in the treatment of uterine cancer

According to von Franque (1915) only three patients treated with radium have been reported who have remained free from recurrence after five years, one by Abbe of eight years, and one each by Abbe and Degrais, of six years Of the patients with lasting cures for shorter periods mentioned by von Franque and others, the most favorable report is the recent one of Kelly and Burnam[1] They report results in 347 patients treated by radium They state that in early and good operable cases the use of radium combined with operation adds greatly to the ultimate cure In twenty such cases there have been no recurrence In 327 patients, all inoperable, 20 per cent have been apparently cured, and in others the relief of symptoms was very marked 'Bad results other than failure to cure have been reported by Bumm, Doderline and Schauta Wertheim[17] states that out of eleven patients treated by radium, nine died from the treatment Cases of rectal and bladder fistula resulting from its use have been reported

The recent improvements in Roentgen-ray technic for treating cancer, that is, the Coolidge tube, adequate filters, the 9 to 10 inch spark gap, cross firing, or in other words, the ability to give larger doses of hard rays of greater penetrating power, will in all probability overshadow the former results from roentgenotherapy Here again sufficient time must elapse before final results can be recorded

It seems certain that the destruction of cancer cells by roentgenotherapy is an established fact This has been proved histologically Case[13] estimates from a review of the literature that in about 25 per cent of the cases of uterine cancer the temporary effect of Roentgen treatment has been satisfactory

Von Seuftert[18] thinks that it is not definitely decided whether radium and mesothorium treatment should be given preference to Roentgen rays The author weighs the advantages and disadvantages of each and comes to the conclusion that at present in the treatment of carcinoma of the uterus, Roentgen rays, radium and mesothorium are of about equal value In certain cases the Roentgen rays are to be given preference, because the necessary amounts of radioactive substance for treatment without danger are at present unobtainable

From the foregoing resume of the methods of treatment of cancer of the uterus, it must be at once apparent that up to the present time our best results are obtained from surgical measures, more particularly the radical abdominal operation Cautery methods and radiotherapy seem to be given a consideration in the treatment of this disease which is unfair to surgical methods of approved value

Why cancer in one part of the body should be treated differently from the same disease in another part is difficult to comprehend, yet this seems to be the case in uterine cancer The surgical removal of the diseased organ and the removal of the contiguous tissues together with the regional lymphatic glands are principles which are just as necessary in the cure of uterine cancer as in any other type of carcinoma

It is therefore appropriate at this time to emphasize the necessity of giving those patients who present themselves in an operable stage the benefit of surgical treatment, a procedure which conforms to the recognized principles for the successful treatment of cancer There is at the present time a tendency to deviate from this rule and to give preference to the methods of treatment which have not as yet given results justifying their universal application

Combined methods of treatment, such as operation followed by the use of Roentgen ray or radium, seem most logical

In 1908 the author,[19] in conjunction with H W Dachtler[20] of Toledo, Ohio, began to treat all patients systematically with the Roentgen ray after the radical abdominal operation of Wertheim had been performed A technic for giving this treatment was devised whereby the patient was placed in an exaggerated lithotomy position, or in the knee chest position, so that the pelvis might be emptied of viscera which would have a tendency to obstruct the action of the rays In this way irradiation was given per vagina, as well as through the abdomen, and all parts of the pelvic cavity where thoroughly treated by the Roentgen ray These treatments were given as soon after the operation as was possible, and were continued over long periods of time The advent of the Coolidge tube has greatly simplified this method of postoperative treatment

The writer has performed typical Wertheim operations on twenty patients, among whom there have been five deaths Thirteen of these patients have had systematic postoperative irradiation with the Roentgen ray Three are alive and have been free from recurrence more than five years, two for three years, three for two years, and two for one year We have had two cases which seem to demonstrate without question the value of postoperative Roentgen-ray treatment The first case was a patient already reported by H W Dachtler,[20] operated on in September, 1907, by the abdominal method, for cancer of the vaginal portion of the cervix In this case there was a carcinomatous infiltration into the right broad ligament which was not removed at operation The patient was thoroughly treated by Roentgen ray after the operation and the mass in the broad ligament entirely disappeared The patient is alive and well about nine years after the operation

The second patient was operated on in August, 1913, for cancer of the body of the uterus with extension of the disease into the iliac and lumbar lymphatic glands These glands were removed at operation and microscopic examination showed them to be malignant The case was one which is generally conceded hopeless, as recurrence is always the rule The postoperative Roentgen-ray treatments were most thoroughly applied both through the vagina and abdomen This patient is now in good health three and one-half years after the operation

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[12] Boggs Russel H The Local Application of Radium Supplemented by Roentgen Therapy Surg Gynec and Obst 1916 xxii 358

[13] Case James T The Roentgen Treatment of Uterine Carcinoma Surg Gynec and Obst April 1916 p 429

[14] Miller, C Jeff Radium in The Treatment of Carcinoma of the Cervix Uteri Surg, Gynec and Obst April 1916 p 437

[15] Kelly, H A and Burnam Curtis F Tr Am Gynec Soc 1916

[16] Von Franque Otto Ueber die gegenwartigen Stand der Strahlen Behandlung des Gebärmutterkrebs Ztschr f Geburtsh u Gynak, 1915 lxxvii 244

[17] Wertheim Quoted by von Franque

[18] Von Seuffert, Evon Present Status Problems and Limitations of Radiant Treatment of Cancer Strahlentherapie 1914 iv 740

[19] Jacobson J H The Radical Abdominal Operation for Cancer of the Uterus Ohio State Med Jour, August 1909, v 451

[20] Dachtler H W Preliminary Report on Postoperative Roentgen Irradiation Following the Radical Operation for Cancer of the Uterus, Am Quart Roentgenol December 1909

SUMMARY

1 In early or operable cases of uterine cancer, the best results are obtained from the radical abdominal operation

2 Owing to the difference in malignancy of uterine cancer, the type of cancer present should be determined whenever possible Cancer of the vaginal portion and of the body of the uterus should be treated preferably by operation

3 What shall be done with the borderline cases is to be determined by the operator's judgment, and his experience with the radical abdominal operation

4 Until radium, Roentgen ray, or Percy's operation shall have proved their superiority to established methods of surgical treatment, their use should be restricted to the inoperable cases

5 A combined form of treatment, that is, operation with radiotherapy, is a method of demonstrated value Systematic irradiation with Roentgen ray or radium should follow every palliative or radical operation for uterine cancer [21]

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS TRACY, DEAVER AND JACOBSON

Dr J H Carstens, Detroit I quite agree with Dr Jacobson on general principles There is only one thing I want to repeat, and that is to make an early diagnosis Cancer has a beginning It is so small that you cannot see it, but it finally gets as large as a pinhead, then as large as a bean, then as big as your head, and then any old woman can see and recognize it What we want is the early diagnosis, and if there is anything that makes me disgusted, it is neglect to make a microscopic examination in every case of curetting or tear in order to get an early diagnosis You may fail a hundred times, but once in a while you will make the diagnosis early

So far as the other is concerned I may be dull of comprehension when I hear my friends speak of the danger of contracting cancer by being exposed to the Roentgen rays It is funny how the Roentgen ray can cure cancer in one case and in another case produce it Electricity and these other forms of treatment for cancer may come and go but surgery stays here forever I agree with everything that has been said concerning operation for uterine fibroids I agree with Dr Deaver in everything he said The only question is that fibroids do not kill immediately, you need not do the operation today or tomorrow as in appendicitis You can get the patient into good condition, you may give her time to consult relatives and when everything is in good condition then the time is propitious for successful operation There is only one thing — and really it pained me after hearing Dr Deaver's paper that he should talk again about hysterotomy I have been able to diagnose pregnancy, and I do not have to cut into the uterus to find out whether a woman is pregnant You can always make a diagnosis, but if the case is obscure you could easily make a roentgenogram and if the patient is pregnant, you may find the bones of the fetus

Dr Henry O Marcy, Boston In 1887 Apostoli was prominent because in Europe he had made a record Mr Keith of Edinburgh had then 70 cases of large fibroid tumors removed without a single death He said, "Apostoli is teaching us a new faith, we shall cease to use the knife" What came of it? I asked Apostoli to operate for me in my hospital I had seen much of the work of Drs Kimball and Cutter sending a very powerful continuous electric current through the tumor by means of deep punctures in it with especial electrodes This treatment proved disastrous Although thus predicated I felt in the multiple evidence of the benefit of the Apostoli treatment I must be wrong Therefore I purchased the expensive, troublesome apparatus and with the utmost care I recorded quite a thousand applications Strange as it may seem, the patients all claimed to be much benefited, but I saw no improvement and abandoned its use The experience of others corroborated my conclusions The method fell into disuse and is now almost entirely forgotten Electricity has been relegated into obscurity, and with most of us, into absolute forgetfulness I can think it very probable that radium and the Roentgen ray will likewise be forgotten in their application to such growths Deaver is a wise man, he knows a great deal that the obstetrician cannot teach him — and if you are in doubt as to pregnancy, make a roentgenogram and find out what is in the uterus Dr Carstens is very wise in giving this simple direction Surgery is the only method worth discussing in this connection

Dr Henry Schmitz, Chicago I subscribe to every statement made concerning the indications for surgical treatment of these conditions I have done a great deal of clinical investigation with the Roentgen ray and radium The question arises in my mind whether the attitude taken by Drs Deaver and Jacobson is the correct one I believe it is not going too far to say that their condemnation of these procedures has been entirely incorrect Cancer is either operable or inoperable When it is operable, it is, under all circumstances, a surgical disease When it is advanced beyond the reach of surgery it becomes inoperable and then the Roentgen rays and the gamma rays of radium are indicated Under these circumstances the rays will ameliorate the patient's condition better than any other therapeutic agent known Radium is indicated in cancer of the uterus only when the condition is entirely inoperable Many cases of inoperable cancer of the uterus become operable under radium treatment The surgeon must then remove the uterus to give the patient the benefit of surgery Not every case of myomatous uterus is operable It is in the inoperable fibroid that Roentgen ray or radium rays are indicated The result of the use of the rays is almost always a clinical cure From my personal standpoint, then, if tumors of the uterus are operable, they must be subjected to surgery and in this I heartily agree with Drs Deaver, Tracy and Jacobson But when they have become inoperable, then the Percy heat method the massive Roentgen ray or radium rays are the remedies to be recommended

Dr Florus Fremont Lawrence, Columbus, Ohio I want to emphasize as strongly as I can everything Dr Deaver said A man who advises a woman with myoma, fibroma, or any other kind of neoplasm, "to let it alone, that it won't give her any trouble," ought to be handled very severely by his medical society, if not elsewhere Any neoplasm may become malignant and many do In one series of 100 cases of hysterectomy for fibroids done at my hands, we found that fourteen were undergoing sarcomatous or carcinomatous degeneration In others it was as low as two per hundred, thus making an average of something more then five per hundred undergoing malignant change At New Orleans I demonstrated my method of supravaginal hysterectomy for fibroids The tumor is delivered through the abdominal incision Then by placing rope about the base of the tumor the broad ligaments are clamped to the side of the stump The peritoneal covering of the uterus is incised and pushed down before and behind Then the tumor is removed by a V incision, the apex of V being down One ligature on each side secures both ovarian and uterine vessels Not a drop of blood has been lost from the patient, and only a slight venous bleeding from the tumor mass When you have sutured over the stump you have reformed the convex pelvic roof instead of making a concave one, and a minimum amount of suturing is required There is no loss of blood, no shock, and the patient is as free from all postoperative trouble as after a simple ovariotomy

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[21] In addition to the references already given the following will be found of interest

Wiebel W Die Klinische Stellung des Carcinoma Corporis Uteri Arch f Gynak 1913 c 135

Peterson, R. Primary and End Results of Fifty One Radical Abdominal Operations for Cancer of the Uterus Surg Gynec and Obst, 1916 xv 135

Von Franque Ueber den gegenwartigen Stand der Strahlenbehandlung des Gebarmutterkrebses Ztschr f Geburtsh u Gynak 1915, lxxvii 244

Von Ott Die operativen Behandlungmethoden des Gebarmutterkrebses u d dabei erzeilten Resultate Berl klin Wchnschr 1913, L

Taylor Howard Canning The Radical Operation for Carcinoma of the Uterus Surg Gynec and Obst January *1916 p 70*

Dr Chester M Echols, Milwaukee In our enthusiasm to cut something out, especially if it be a tumor which might become malignant, I think we are apt to overlook the definite indications for myomectomy as opposed to hysterectomy or supravaginal amputation I admit that the indications are not present in the majority of cases, but in young married women there should be left undisturbed the function of childbearing and of menstruation if at all possible In my student days I was taught that myomectomy was more dangerous than hysterectomy because of the possibility of bleeding and other complications My experience in a considerable number of myomectomies has convinced me that its indications are often overlooked One case illustrates quite a class Two and a half years ago the wife of a prominent physician in our city was desirous of having children Because of the presence of multiple fibroids of moderate size she was advised to have a hysterectomy I examined her and advised that she have a myomectomy done, which she did She is now the happy mother of a three or four months old baby It is interesting to note that careful examination shows that there has been no recurrence of tumors, not even to the size of a cherry Hysterectomy can always be done as a last resort in case of recurrence of the tumors, and it is an operation practically devoid of danger

Dr J A. Ruben, Pittsburgh If the use of Roentgen rays and radium in the treatment of malignant diseases or tumors of the uterus can be considered malpractice then the use of any new remedy, not universally accepted, must be considered malpractice Regarding the old idea of Roentgen rays causing cancer, it may be said that the earlier roentgenologists who sacrificed their lives trying to develop something new that would relieve or cure disease did so in ignorance of the physical character of the force to which they exposed themselves and their patients They did not know that the Roentgen rays and the rays of radium could be divided into soft, medium and hard rays The soft rays have so little penetrating power that they can be stopped by a sheet of paper, and are mostly responsible for the burns of both patients and operators On the other hand, the hard rays have such power of penetration that they may pass through armor plate, these cause little or no injury to normal tissues even in very large doses Of the pioneers, in this work, probably some will die of cancer—some have—but today we understand better what we are handling With the use of the radiometer for measuring the Roentgen ray doses and with standardized technic (3 millimeter thickness of aluminum or lead as filter) even in the treatment of deep seated conditions, our patients suffer no harm The operator also, with modern protection, standing behind a leaded wall, can feel perfectly safe Finally a number of gynecologists are now doing this work themselves and under their own careful observation, can soon distinguish those cases unsuitable for radiotherapy, and in sincere honesty, advise a timely operation

Dr Stephen E Tracy Philadelphia I do not believe that all fibromyomata uteri should be treated by surgery nor do I believe all should be treated by roentgenotherapy I question the sincerity of the man who claims he can cure all such tumors, except those removable by vaginal myomectomy, by roentgenotherapy I agree with Dr Schmitz that some cases should have roentgenotherapy Dr Pfahler will not treat a case of fibromyomata uteri unless referred to him by a surgeon, he wants to know what he is treating In fibromyomata uteri associated with malignancy I believe that early radical operation will give the best results Formerly, Roentgen treatment for malignant disease in the female pelvic organs was practically useless Now, roentgenologists claim that with a better technic, more powerful machines, and a competent operator, much may be accomplished in these cases In view of these claims, it would seem that better results should be secured in cases of fibromyomata uteri associated with malignancy if the radical operation be followed by systematic Roentgen treatment by a competent operator, the same as is done in carcinoma of the breast and in other superficial malignancies I have never seen a case of fibromyomata uteri in which I was afraid to operate and my mortality does not indicate that I have been reckless All my patients have been studied carefully, and in some cases it has taken weeks, and in a few even months to get the patient in a sufficiently good condition to undergo an operation with a reasonable hope of a satisfactory result I agree with Dr Carstens that material removed by the curet should be examined microscopically Dr Lawrence referred to his method of hysterectomy This will no doubt work out well in some cases, but to use such a technic it is necessary to have cases made to order His technic cannot be carried out in large intraligamentous nodules or in tumors associated with inflammatory lesions I fully agree that the cervical stump should be sutured to the infundibulopelvic and round ligaments This we always do, but with a different technic Dr Echols spoke of myomectomy In the paper I stated that we should know the age at which the degenerations take place in these tumors in order to decide whether we should do conservative or radical surgery In women under 40 if possible a myomectomy should be done, after 40 as a general rule, on account of the changes in the uterus and tumor a hysterectomy is the better operation

BACTERIAL VACCINES IN TREATMENT OF PULMONARY TUBERCULOSIS

IMPRESSIONS AS TO CLINICAL VALUE *

S G BONNEY, MD
DENVER

Although I have had opportunity to note the apparent effect of vaccine therapy, independently of tuberculin, in a large number of cases, I will submit merely a preliminary statement of general impressions derived from clinical observation

Do bacterial vaccines exert an influence for good in pulmonary tuberculosis, and, if so, under what conditions and with what restrictions?

Are they capable of doing harm, and if so, what precautions should be observed in, and what are the special contraindications for their use?

My position, from the data thus far obtained, is that

1 Vaccine therapy should by no means be permitted as a routine measure in the treatment of tuberculosis

2 It has a legitimate place as a tentative procedure in a class of cases subject to certain modifying limitations

3 Careful adjustment of dosage is vitally important

4 The number of pulmonary invalids for whom vaccines are properly applicable is comparatively small

5 The results obtained are very uncertain

6 The proportion of those exhibiting improvement is disappointing

7 The gain established in a few is sometimes impressive

8 Vaccines not infrequently are shown to possess vast possibilities of injury

9 Finally, the attitude of the profession should be one of the utmost conservatism

It may be added parenthetically that the foregoing statements seem to be true, to a certain extent at least, of tuberculin therapy

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* Read before the American Climatological Association at the Annual Meeting Washington D C May 10 1916

Apropos of these rather definite opinions, attention should be called to the not infrequent delusion regarding the efficacy of this treatment, to the indiscriminate administration of vaccines for nearly all classes and conditions of pulmonary tuberculosis, and to the deplorable results occasionally noted from the abuse of an agent which, intelligently employed, may become at times of genuine value.

A single case may serve as an illustration of the careless empiricism displayed in the use of bacterial vaccines.

Case 1.—A woman, aged 32, came under my observation in June, 1915, presenting the history of a tuberculous infection seven years previously. Since that time she had visited various health resorts and sojourned in several sanatoriums, submitting to tuberculin medication for prolonged periods, as well as to the administration of bacterial vaccines, with subsequent unfavorable results. She came to Colorado two weeks after a rather severe hemorrhage, exhibiting loss of weight, very considerable elevation of temperature, dyspnea and occasional chills and night sweats. There were physical evidences of active tuberculous involvement in the right lung from the apex to the third rib and to the lower edge of the shoulder blade. There was also active involvement in the left lung. Tubercle bacilli were numerous in the sputum. For months the tendency had been that of a progressive decline. In the face of these clinical manifestations and physical signs, the patient was being given, at intervals of from one to three days, a stock vaccine containing six different micro-organisms. No culture had been taken of the sputum and hence no information had been obtained as to the nature of the infection, yet the patient was provided with an elaborate outfit and directed to have her physician or nurse administer the vaccine in accordance with instructions received.

As there was no clinical or bacteriologic basis affording the slightest justification for this treatment, it was promptly suspended, and the patient was committed to a systematic regimen in accordance with conservative methods. In ninety days the fever was under complete control and there were other evidences of marked clinical improvement, including a gain in weight of 15 pounds and a pronounced lessening in the activity of the tuberculous process.

The development of unfavorable symptoms following the use of bacterial vaccine should always demand its prompt discontinuance.

In this connection it is interesting to note a similar illustrative example of the misuse of tuberculin.

Case 2.—In May, 1915, a patient from one of the large Eastern cities presented a letter of introduction from an active practitioner who described the condition, reported the use of an autogenous vaccine and directed that at regular intervals 3.5 mg. of Koch's old tuberculin be given.

Examination of the chest disclosed the presence of an active and extensive tuberculous involvement in the left lung, moist rales being recognized from apex to base. The sputum was literally peppered with tubercle bacilli. It is almost unnecessary to state that the tuberculin was discontinued and the patient put in bed. The temperature has since been normal, he has gained 35 pounds in weight, the cough and expectoration have entirely disappeared, and physical examination reveals but an occasional semidry click just outside the left precordial region.

Can any one fail to recognize the relation of cause and effect in such instances as these?

It is possible that the popularity of bacterial vaccines as a conventional measure for pulmonary disease has not been as frequently observed by other clinicians in health resorts. In this event, my impression as to their widespread employment before resorting to climatic change must be regarded as one of the anomalies of my experience. While the detrimental effects of injudicious specific medication are not always so conspicuous as in the cases cited above, evidences of an unfavorable influence are not wanting in my own cases, as shown by occasional chills, elevation of temperature, increase of cough, malaise, or varying degrees of prostration. While these disturbing manifestations may of course be attributed to improper dosage and, therefore, are capable of later amelioration or suppression, a happy adjustment of size and frequency of injection is not always to be attained. In the absence of precise laboratory methods to control their use, the results of their administration, especially under present methods of preparation, inevitably become a matter of extreme uncertainty. As usually prepared, even by those well equipped for this work, there is no positive assurance that the micro-organisms constituting the vaccine are identical with those chiefly responsible for the infection and its consequences in the individual. Cultures taken on successive days with equal care do not always furnish the same results. The use of vaccines representing the isolation and incorporation of several varieties of micro-organisms is necessarily subject to still greater hazards. Notwithstanding accurate standardization, the clinician in such instances possesses no means by which to adjust separately the dosage of the several component ingredients. While a degree of immunity may thus be established for one infection, no corresponding influence is exerted on the others. It is entirely possible that, owing to modifying influences pertaining to the host and to important changes in the invaders incident to environment and adaptation, certain constituents of the vaccine may later become not only useless but actually harmful by prolonging the negative phase and lessening individual resistance.

It would appear that the use of several separate vaccines, each consisting of but one type of micro-organism, would only add to the confusion, because of the difficulty of such an interspersing of doses, in allowing opportunity for clinical deductions.

In these cases the work with the complement fixation test is of interest and worthy of commendation. It is perfectly conceivable that in some instances the information obtained by this means may be of the utmost value. This has been well shown recently in two of my cases, in which the patients exhibited an obscure fever with other symptoms suggesting tuberculosis, which caused their removal to Colorado. In both instances the infection was shown by the complement fixation test to be gonococcic in nature and was favorably influenced by vaccine therapy. Some difficulties, however, are at present encountered in employing this test to ascertain the predominant secondary infection in pulmonary tuberculosis.

It should perhaps be recognized that embarrassment may result from the existence of intercurrent complications. An influenza or other infection, perhaps of remote origin, may yield a positive response on exhibition of the complement fixation test and yet be without especial significance as regards the lessened individual resistance occasioned by another secondary infection. Thus in some cases it may be impossible to conclude that a positive test from one organism affords any direct information as to the infection from which the patient is actually suffering. Furthermore, even in the presence of a positive test, the lack of definite control renders it impossible to measure with any degree of accuracy the extent of the immunity established.

As illustrative of some of these considerations the following case is of some interest.

Case 3.—In March, 1913, a patient came to Colorado fifteen months after the development of initial pulmonary symptoms. There was great loss of weight, prostration, fever, dyspnea, cough and expectoration, with well defined physical signs in each lung, and especially active involvement of the left. As a result of rest in bed and other rational measures and, without recourse to specific medication, a gain of 36 pounds resulted in the course of eight or ten months, with corresponding change for the better in all the clinical manifestations, including the physical signs. The improvement finally ceased, and was followed by a stationary period for several months, at the end of which a vaccine, prepared in ampules by Drs. Simon and Burdick, appeared to be of very substantial benefit in diminishing the cough and expectoration and lessening the moisture in the left chest. The vaccine was exhausted at the end of about three months, and a culture taken at that time disclosed an entirely different type of infection. Another vaccine was prepared by Dr. Burdick and, although administered for two or three months in steadily decreasing doses, exerted an apparent unfavorable influence, whereupon its use was suspended. After several months without appreciable change in the general condition of the patient, culture of the sputum revealed a still different combination of infections, and a vaccine was prepared by Dr. Waring. This seemed at first to have a beneficial effect, but later became apparently inert.

It is possible that in such an instance the information to be obtained from the use of the complement fixation test might prove of definite value. It is also suggested by this and other experiences that the effects produced by bacterial vaccines may be merely relative and the improvement but transitory, even though for a time an apparent increase in the defensive resources is developed. Desirable as it is to avoid the production of a reaction in such cases, an indication of tolerance is not necessarily an evidence of acquired immunity and is quite insufficient to justify an assumption as to the benefits afforded. Similarly, the absence of unpleasant symptoms does not always suggest the wisdom of continued increase of dosage, but the nature of the clinical manifestations may represent important contraindications.

In this connection especial attention should be devoted to the condition of the kidneys. In many instances these organs are already overtaxed in the effort to eliminate toxins incident to the tuberculous and mixed infections, especially those of streptococcic origin. An additional burden is often imposed by an injudicious attempt to increase largely a protein diet. Under a prolonged continuance of these conditions the administration of vaccines in large doses may be responsible for urinary findings indicative of further injury to the renal tissue.

Amid the obscurity involving many features of vaccine therapy and the inherent difficulties owing to the possible complicating conditions in pulmonary tuberculosis, arbitrary conclusions seem unwarranted. Provisional opinions are permissible only when possibilities of error are eliminated to the fullest extent. When the employment of bacterial vaccines represents simply the introduction of a new element in the therapeutic regimen, all other conditions remaining approximately the same as before its use, it may be fair to assume a causal relation. Thus, sources of confusion, and doubt as to the value of this or any other medicinal agent must obtain, if administered to invalids shortly after radical climatic change, the physiologic influence of which may overshadow the effect of specific medication. In like manner incorrect deductions are unavoidable, in the event of a coincident change of management or mode of life. In order to minimize the uncertainties of clinical opinion as to their value, it is essential that vaccines be used only in carefully selected cases, preferably those conforming to a rigid regimen for a considerable period without change of climate or environment. The conclusions thus afforded are made still more reliable if the application of this agent is limited to patients whose condition has become more or less stationary with the ultimate prognosis somewhat doubtful. In the absence of a definite progressive tendency in either direction, the development of a substantial clinical change following its use cannot be entirely disregarded. There exists no valid excuse for giving vaccines to patients who are doing well, and but little encouragement for a proper interpretation of results if given to those who are rapidly declining. While vaccines would seem especially appropriate for those exhibiting unsatisfactory progress, yet not entirely hopeless, it is not always possible, even in these cases, to attribute an improvement solely to the specific medication.

In addition to the remedial agent two factors may contribute quite materially to this result, the psychic element, which is worthy of practical consideration among pulmonary invalids, and the opportunity presented for closer observation and more careful direction. Even the fact of a demonstrable gain following the use of bacterial vaccines affords no actual criterion in all cases by which to estimate its specific medicinal effect. In the midst of the discouragement and pessimism engendered by periods of deferred hope, the moral uplift from the thought that something is being done is sometimes quite remarkable. An improved mental attitude, a better appetite and digestion and an increasing spirit of cooperation ensues. The more frequent contact of physician and patient, the influence of which is far-reaching, results in mutual sympathetic relations productive of earnest, interested effort on the part of each. Faithful compliance with instructions is thus secured and a correspondingly greater medical efficiency. Caution should be exercised, however, lest following the initial enthusiasm, the physician permit himself, in the frequent routine of vaccine administration, to devote insufficient attention to important details of management which constitute the very essence of any success to be obtained. The tendency under such circumstances to drift unconsciously from the recognized features of personal control may be quite pronounced. If this is carefully avoided, and due advantage taken of the facilities afforded for more detailed supervision, it is quite conceivable that distinct benefit may accrue from vaccine therapy, quite irrespective of its specific action.

The cautious employment of bacterial vaccines, as previously stated, would seem to be appropriate chiefly for persons who failed to show satisfying improvement under conservative management. I have restricted its use largely to this class of patients, as I could not consistently subject an invalid presenting every reasonable assurance of eventual recovery to the active influence of a therapeutic agent of uncertain value. It does not follow, however, that vaccines are indicated for all patients who are doing poorly. Such a broad classification would include not only those who, on account of the advanced infection, are clearly doomed to a fatal termination, but also others whose retardation of progress may be ascribed to important, though not hopeless complications, or to the development of disturbing conditions capable of amelioration under resourceful management In many of these cases the unfavorable factors are so apparent as to suggest change of environment, removal of adverse influence, a more generous and appetizing cuisine, added opportunity for physical and mental repose and closer attention to other details, rather than to an abrupt recourse to a doubtful form of medication In the absence of other pathologic conditions, in themselves explanatory of unsatisfactory general progress, and demanding special remedial measures, it may be granted that a demonstrated inability to respond favorably to an intelligent regimen suggests the expediency of specific therapy In my earlier experience with vaccines, their application was largely confined to far advanced patients exhibiting a relentless decline with pronounced septic manifestations All of these, by virtue of every consideration ordinarily influencing prognosis, were regarded as hopeless In many of the cases, the course of the disease was uninfluenced, but in a few, definite improvement was noted, while in one or two conspicuous instances the clinical picture was unexpectedly transformed On the whole, the results obtained in this class of cases have been extremely disappointing, and the impression has been received that but little if any encouragement is afforded from vaccine therapy under such conditions

It would seem that the elaboration of protective substances within the individual from the introduction of a bacterial agent is most unlikely when, in approaching terminal states, the natural powers of defense have become exhausted It is altogether probable that at such a time the machinery of immunization is inoperative because of the flooding of the blood with bacterial products without capacity for resulting formation of antibodies When therapeutic stimulation of the active protective processes is thus impossible, an attempt toward the development of passive immunization by the injection of antibodies contained in the serum of immunized animals is justifiable, although likely to be of little avail owing to the difficulties of proper serum identification

Notwithstanding the very proper objection to the rationale of this procedure, the fact remains that clinical experience has furnished evidence concerning its value in rather a small proportion of cases

The fever of pulmonary tuberculosis, exclusive of the previously mentioned septic infections in advanced cases, may represent, more than any other feature of the disease, a possible indication for vaccine therapy A persisting elevation of temperature independent of the nature and extent of pathologic change represents an insuperable obstacle to recovery, and hence the application of therapeutic measures for its control is especially significant It is necessary, however, to discriminate with the utmost care between the fever of mixed infection and that dependent on other causes It is, of course, absurd to expect benefits from bacterial vaccines when the fever is due to such unrecognized conditions as a pleural effusion, malaria or miliary tuberculosis Instances of this kind are by no means infrequent, as well as obscure gallbladder infections, chronic appendiceal involvement sinus disease, cystitis and colon infection of the kidneys A recent experience has been particularly instructive in that the fever of a young man, shortly after arrival in Colorado, with pulmonary lesions, was found to be produced by paratyphoid B infection This information was acquired only after blood cultures, several Widal tests and an examination of the spinal fluid had elicited negative results, and the nature of the clinical manifestations had suggested a reasonable doubt as to the possible causal relation of a mixed infection, despite the detection of the secondary micro-organism in the sputum

Elevation of temperature is not necessarily attributable to the accompanying bacteria of mixed infection That absorption of the toxins of the tubercle bacillus may be responsible for fever in some cases is generally accepted

While the secondary bacteria of mixed infection may play an important role in the development of the pathologic processes common to tuberculosis, and exert an influence on the clinical characteristics of the disease, similar constitutional manifestations may exist without recognition, after repeated examinations, of the specific micro-organism in the sputum or blood Even the detection of the accompanying bacteria in the sputum is not of itself sufficient to confirm an assumption that the mixed infection is the sole responsible cause for the clinical symptoms Their presence at least affords no reliable measure of the severity of the infection and the relative gravity of the situation, which for practical purposes is best estimated by the extent of temperature elevation The expulsion of bacteria with the tuberculous sputum, in the absence of unfavorable clinical manifestations, is no indication for the employment of bacterial vaccines Even when apparently characteristic evidences of mixed infection are present, an element of real doubt as to the propriety of vaccine therapy is unavoidable as the syndrome may, after all, be of essentially tuberculous origin Irrespective of these considerations as to pathogenesis, and with a just appreciation of the inevitable uncertainties of action, it appears nevertheless, permissible to resort to vaccine therapy under the conditions enumerated

In my experience, the results obtained in a fair proportion of cases in which there was moderate fever have been such as to encourage its further cautious employment No assurances as to its probable effect can be given, and patients should be made to understand that its use is largely experimental Under a wisely directed management they have but little to lose from its trial and perhaps something to gain

This is also true to a large extent in connection with its employment in afebrile cases While the greater proportion of such invalids may be expected to make fairly satisfactory progress under proper supervision without recourse to vaccine therapy occasional indications for its administration may be found in patients with distressing cough and abundant expectoration Many of these cases without fever exhibit more or less cavity formation or bronchiectasis with varying degrees of fibrosis Under these conditions, even if but slight loss of weight has taken place, the constructive change is necessarily slow, while, if nutrition is seriously impaired, the difficulties of successful management are very considerable The application of vaccines to patients of this class is quite appropriate and the results are sometimes gratifying Did opportunity permit I could cite numerous cases under my own observation in which the vaccines proved of appreciable benefit and could present in person a few rather exceptional instances of the remarkable improvement sometimes achieved Notwithstanding these decidedly picturesque examples, which though impressive are infrequently observed, the fact remains that my own clinical experience suggests for vaccine therapy but a limited field of usefulness As a routine method of treatment in pulmonary tuberculosis it cannot be too strongly condemned As a special measure of occasional value, but often of doubtful utility, it appears worthy of a judicious trial in selected cases

Steadman Building

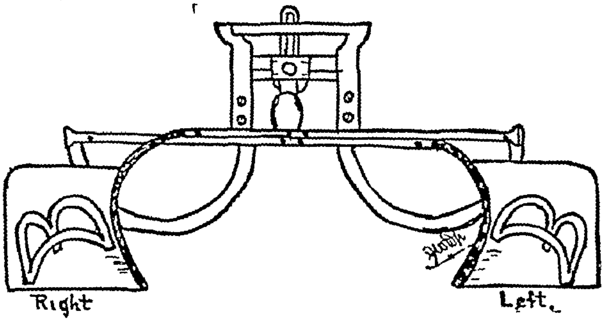
New Instruments and Suggestions

A SEMICIRCULAR CANAL INDICATOR

OF AID IN MAKING THE ROTARY AND CALORIC TESTS OF THE VESTIBULAR APPARATUS

J W Downey, Jr, M D, Baltimore
Surgeon Baltimore Eye, Ear and Throat Hospital Associate in Otology, University of Maryland School of Medicine and College of Physicians and Surgeons

After the examination of a large number of patients drawn from the neurologic clinic of Dr A C Gillis at the Mercy Hospital, and from my otologic clinic at the Baltimore Eye, Ear and Throat Hospital, Dr Gillis and I feel that the vestibular tests of Barany are worthy of the most elaborate study and that they furnish a wide field for original investigation



Semicircular canal indicator the drawing is made from the rear view of the trial frame with the bows folded

We have assured ourselves that in normal persons the reactions to the rotary and the caloric tests will come through simply and conclusively Therefore, we believe that abnormal reactions are undoubtedly due to some interference in the course of arcs whose complexity have, so far, baffled demonstration

We accept the postulate of Randall and Jones of Philadelphia, that the fibers from the different semicircular canals have entirely separate tracts of their own and we have corroborated their findings to our own satisfaction in a series of cases on which we hope later to report We believe, therefore that it is of the utmost importance to make the rotary tests with the patient's head in such positions as will bring into horizontal plane the various pairs of canals for it is only in this plane that stimulation can be aroused by rotation and the caloric tests with the canals in the vertical position for similar reasons

The mental concentration necessary to carry the impression of so many factors is sometimes distracting in the general summing up of our findings I have, therefore, devised this semicircular canal indicator, which consists of models of the canals mounted on the bows of a trial frame With the trial frame fitted to the patient, the canals are in approximately the correct position and a glance will show the ones that are being acted on by the rotation or the douching in any position of the head Strong plus lenses suggested and used by many observers the more carefully to study the nystagmus may be used in the trial frames A *bite fixator* modeled after that of Barany may also be attached

I feel that this indicator has the advantage over the Brunings *otogoniometer* in that it is not in the way in any position it may be desired to place the patient's head, and though, perhaps, not so accurate mathematically, it is vastly superior in demonstrating the position in space of the various canals to those who are not constantly visualizing the anatomic peculiarities of the internal ear

529 North Charles Street

CUTANEOUS TUBERCULIN TEST BY PUNCTURE WITH A SOLID NEEDLE

D A Craig, M D, London, Ont
Superintendent Queen Alexandra Sanatorium Chief of Tuberculosis Division Institute of Public Health, London Canada

In tuberculosis dispensary work in the examination of contact cases the various skin tuberculin tests have proved of considerable value particularly in children Some time ago, Dr H W Hill of the Institute of Public Health here began vaccinating against smallpox by means of puncture with a solid needle through a drop of vaccine His method was successful, and the detail of the procedure has been reported[1]

The cutaneous tuberculin tests have been extensively used in our city dispensary, and it was decided to try the skin test by puncture through a film of tuberculin After trying a large number of cases side by side with the von Pirquet test and also a number of definite open cases, we have come to the conclusion that the puncture test has many advantages, and we are using it constantly in our work

For the test, pure undiluted 'O T" is used For the control, we have used glycerinated broth, as it approaches most nearly the basic principle of the tuberculin For making the puncture a solid needle is used preferably an ordinary sewing needle The procedure of the test is as follows

The skin of the forearm is washed with soap and water, dried, and alcohol or ether is applied and allowed to dry A thin film of the control solution is placed on the skin, and a series of small punctures made through the film obliquely with a sterilized sewing needle The punctures should be quite superficial, and in no case should the operator draw blood Only the extreme tip of the needle is introduced A film of pure "O T" is placed on the skin 1½ inches below the control area, and punctures are made through this in a similar way Six punctures in a space one eighth of an inch square are sufficient A circle may be drawn around the area with a flesh pencil or pen and each area marked The test areas may then be entirely wiped off as it is not necessary to allow the tuberculin or control to dry The reaction is produced in this test by the slight amount of tuberculin which is carried under the superficial layer of the skin by the point of the needle and not by the tuberculin on the surface Reaction, when present, usually occurs in from twelve to forty-eight hours, and is marked by an infiltration of the tuberculin area The patient should be instructed not to wash the arm until the test has been observed

This is in reality a modified intradermal test In a large number of cases which we have tested the control entirely disappeared and when the test is negative were it not for the marking by the skin pencil or pen, one would be unable to find the test areas The advantages which this test seems to hold are that the traumatic tissue reaction is extremely slight, and the personal factor of scarification as in the von Pirquet test is largely done away with This is proved by the fact that no evidence of the control can as a rule be found the day following the test The procedure is painless when properly carried out, and the patient does not have to wait until the film dries thus saving considerable time Moreover the patient cannot rub off the tuberculin or infect the tested areas In conclusion one would caution that the tuberculin from the tuberculin area be not transferred to the control area by means of the needle or the absorbent cotton used in wiping off the tuberculin The same needle or sterilized cotton may be used for each puncture area, provided the control is punctured or wiped first

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[1] Hill H W Canad Med Assn Jour March 1916

So far we have been successful with this test, and we are hoping that it may prove of advantage to the clinician, particularly in the examination of children

A NEW NEEDLE FOR SUTURING PURPOSES

William C Speidel, A B, M D, Seattle

The instrument illustrated herewith is self explanatory The advantages of a double pointed needle are obvious Among them may be mentioned

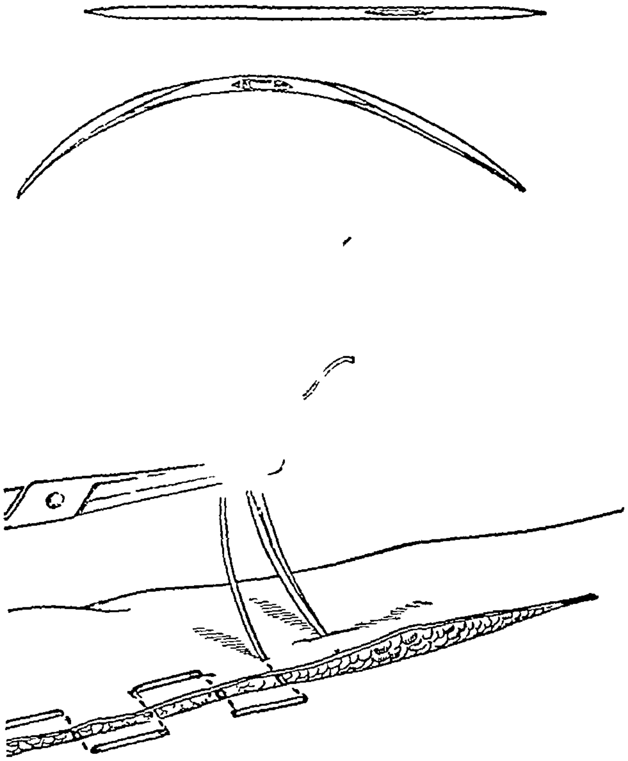
1 *Time is saved in that it is only necessary to seize the* needle once on inserting it and once on withdrawal and reinsertion

2 Action is facilitated in the angles which are so frequently encountered in deep suturing, as the gallbladder, and pelvic and general abdominal work whenever a curved needle is indicated

3 In intestinal suturing where a purse string stitch is desirable, it finds particular service, for example, in a Czerny-Lembert it can be worked with clocklike precision, requiring an easy to and fro movement, through and right back again a straight form of needle being employed here

4 The difficulty in utilizing short ends of suture is reduced to a minimum, and proves a saving of catgut or other material

5 It is simple It may be seized at either end and suturing continued without inconvenience or interruption



Needle for suturing above straight needle showing the eye toward one end in the middle, curved needle, showing eye in the center below, needle in the act of being reinserted

An objection that may be offered is the danger of glove puncture But here let me emphasize the importance and good practice of keeping the hands out of a wound as much as possible, the needle being properly handled only with forceps

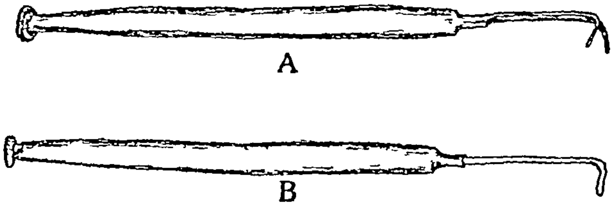
The fact that we have an additional point to attend to is more than offset by the evident and practical advantages already set forth

519 Cobb Building

INSTRUMENT FOR REMOVING FOREIGN BODIES FROM THE NOSE

Charles H Cargile, M D, Bentonville, Ark

This instrument is helpful in removing foreign bodies from the nose It is composed of two parts or shafts One is smaller so as to pass through the other hollow one and rotate within it The distal extremity of each terminates in a very delicate hook very like a strabismus hook These are so adjusted that when closed they lie in lateral apposition with a combined thickness not greater than that of a strabismus hook



Instrument for removing foreign bodies from the nose *a* open *b* closed

The proximal end of the smaller shaft projects slightly beyond that of the larger hollow one and terminates in an enlargement to be grasped by the fingers during rotation

In using the hooks are carefully slipped closed (rotated into lateral apposition) along the septum or lateral wall of the nasal passage until beyond the foreign body Then the whole instrument is slightly rotated until behind it This done, the hooks or tines are separated in proportion to the size of the body to be withdrawn along with the instrument

The only objection is the cost of the instrument, which is greater because it is necessarily hand made

Therapeutics

"COLDS"

"Colds," also called by various other names, such as coryza acute rhinitis and acute nasopharyngitis, are without doubt the most common and least severe of all infections As a rule, "colds" occur in epidemics, almost always being contracted by one person from another Perhaps the commonest way of spreading is by sneezing, in which manner the agents of the infection are disseminated into the surrounding atmosphere Aside from this, experiments have demonstrated that there are organisms residing in the nasopharyngeal passages which may produce the infection in others by inoculation

Tunnicliff,[1] in the acute and chronic forms of rhinitis, isolated an anaerobic gram-negative bacillus, which she named the *Bacillus rhinitis* In a large percentage of cases this organism was found in pure culture It was also found in about 90 per cent of the cases of chronic rhinitis in which there was a mucoid discharge That this organism was the etiologic factor in acute rhinitis was shown by the production of the condition after experimental inoculation and by recovering the organism in pure form from those infected by the *inoculation* Kruse,[2] working along the same lines, was able to demonstrate that when the secretions from the discharge in cases of acute rhinitis were taken and diluted even as much as twenty times, and then filtered, the filtrate inoculated into the noses of healthy people produced typical cases of acute rhinitis As a result of this he concluded that the acute rhinitis was caused by an invisible and filterable virus, since the filtrate when cultured remained sterile.

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[1] Tunnicliff Jour Infect Dis. 1913 xiii 283

[2] Kruse Munchen med Wchnschr 1914 lxi 1547

More recently Foster[3] repeated Kruse's experiments and obtained similar results. He, however, went further, and, using Noguchi's method for growing the parasite of rabies and the organism of poliomyelitis, was able to obtain from the filtrate an organism which, when inoculated into the noses of eleven soldiers, produced a typical condition of acute rhinitis in all of them. Cultures made from the nasal secretions of these also showed the same growth on mediums. Foster, examining the growth under the dark-field microscope, states that there were "myriads of extremely active minute bodies occurring singly, in pairs and in agglomerations of varying magnitude. These did not stain satisfactorily with the usual stains."

As a rule, for the development of a "cold," the soil on which the infective agent will grow, that is, the nasopharyngeal passages, must first be prepared. This is usually effected by the exposure of the individual to varying changes in the temperature of the atmosphere by which the person is surrounded. Thus, it is still commonly believed by some that drafts per se, alone, are responsible for the "cold," or that it is produced in persons whose feet become cold or chilled from the cold or damp ground. Probably there is a dryness of the throat and nasopharynx, and as soon as the normal protecting nasal secretions are absent, the infecting organisms obtain a foothold, and the characteristic symptoms follow.

Although some "colds" may be more severe than others, and even though some may be readily aborted, even in twenty-four hours, nevertheless, the symptoms in all cases at the onset are usually the same. The incubation period, according to Foster,[3] is from eight to thirty hours.

The "cold" begins with dryness of the nose and throat. As dryness produces considerable irritation, there is a frequent desire to sneeze. At this stage, recovery may occur after a few hours rest. As a rule, this stage is followed by slight constitutional sensations of an uncomfortable nature. There may be chilliness and flushing, and a slight rise in temperature, as high as 100 F. The dryness is followed by a congestion of the nasal mucosa, with swelling. The nose feels blocked and stuffy. The sense of smell is lost, and even the taste may be abolished, or perverted. There is also present a dull headache over the frontal sinuses, and a heaviness of the head. In a few hours, or usually on the day following the onset, there appears a marked nasal discharge which seems to flow incessantly. This discharge is thin and watery, and of an irritating nature, and results in an eczematous condition and soreness of the nares and the alae nasi.

The inflammation may spread to the eyes, the conjunctivae of which become reddened and inflamed, and the eyes feel hot and irritated. At times the infection, or at least the irritation, will extend up the eustachian tubes to the middle ear, and will produce tinnitus aurium, with slight deafness. Tonsillitis and bronchitis often follow in the wake of acute rhinitis. By the time that this occurs the original inflammation may begin to subside, the symptoms of the rhinitis persisting from three to six days.

There may be a mixed infection in which some organisms other than the one which produced the primary symptoms will predominate. When this occurs, the discharge will change from a thin, watery one to a mucopurulent, or even to a purulent discharge of a dirty greenish color. From the discharge can be isolated the commoner organisms, such as the *Micrococcus catarrhalis, Streptococcus viridans, Streptococcus hemolyticus,* the pneumococcus, and even the *Bacillus influenzae*. When such a discharge does occur, its duration cannot be definitely foretold.

The treatment of "colds" depends on the stage of the infection at which the treatment is to be started. At the onset, when the mucosa is dry and free from secretions, a purge should be given. A hot bath may also be taken at this time. This should be followed by rest in bed. An ice bag to the head and a hot-water bag to the feet sometimes aid in giving relief, as do also a full hot tub bath and a large glass of hot lemonade before going to bed. For local relief of the nose condition, a spray of epinephrin 1:10,000 may be used.

When there is a profuse watery discharge, with or without a sore throat, atropin by mouth can be given until there occurs a dryness of the nose and throat. Hot alkaline nasal irrigations will be found useful. If the discharge is mucopurulent, hot alkaline nasal douches and the application of a 1 per cent. solution of cocain hydrochlorid to the nares may be tried. Sprays of liquid petrolatum are also soothing. The diet consists mainly of milk and eggs. An alcohol rub three times a day seems to have a beneficial action, and for further antiseptic action by way of the circulatory system, hexamethylenamin, 5 grains, internally, three times a day, may be prescribed.

An associated tonsillitis or pharyngitis of course requires appropriate treatment.

Vaccines in "colds" have not demonstrated their usefulness, probably because the vaccine has not been prepared from the true infecting organisms. Mixed vaccines have also been given from a prophylactic standpoint, and favorable results have been reported in those who have previously had frequent attacks of "colds." There is, however, no good proof that such preventive vaccinations are often of benefit. It is possible that a vaccine prepared from the organism described by Foster might be used to immunize an individual against future attacks of "colds."

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[3] Foster, G. B.: The Etiology of Common Colds, The Journal A. M. A., April 15, 1916, p. 1180.

New and Nonofficial Remedies

The following additional article has been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

W. A. Puckner, Secretary.

CHLORAZENE (See The Journal, Sept. 30, 1916, page 1021).—The following dosage form has been accepted:

Chlorazene Tablets, 4.6 Grains.—Each tablet contains chlorazene 4.6 grains.

Prepared by The Abbott Laboratories, Chicago, Ill.

Truth Attendant on Knowledge.—He that would make real progress in knowledge must dedicate his age as well as youth—the latter growth as well as the first fruits—at the altar of truth.—Bishop Berkeley.

sterilized cotton may be used for each puncture area, provided the control is punctured or wiped first

So far we have been successful with this test, and we are hoping that it may prove of advantage to the clinician, particularly in the examination of children

A NEW NEEDLE FOR SUTURING PURPOSES

William C Speidel, A B, M D, Seattle

The instrument illustrated herewith is self explanatory The advantages of a double pointed needle are obvious Among them may be mentioned

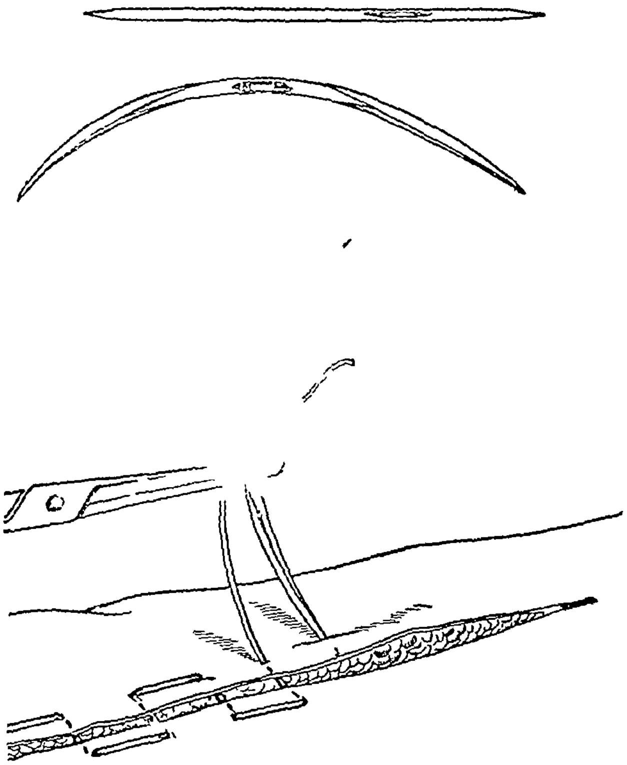
1 Time is saved in that it is only necessary to seize the needle once on inserting it and once on withdrawal and reinsertion

2 Action is facilitated in the angles which are so frequently encountered in deep suturing as the gallbladder, and pelvic and general abdominal work whenever a curved needle is indicated

3 In intestinal suturing where a purse string stitch is desirable, it finds particular service, for example, in a Czerny-Lembert it can be worked with clocklike precision, requiring an easy to and fro movement, through and right back again, a straight form of needle being employed here

4 The difficulty in utilizing short ends of suture is reduced to a minimum, and proves a saving of catgut or other material

5 It is simple It may be seized at either end and suturing continued without inconvenience or interruption



Needle for suturing above, straight needle, showing the eye toward one end in the middle curved needle showing eye in the center below, needle in the act of being reinserted

An objection that may be offered is the danger of glove puncture But here let me emphasize the importance and good practice of keeping the hands out of a wound as much as possible the needle being properly handled only with forceps

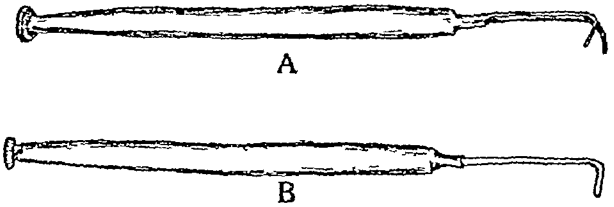
The fact that we have an additional point to attend to is more than offset by the evident and practical advantages already set forth

519 Cobb Building

INSTRUMENT FOR REMOVING FOREIGN BODIES FROM THE NOSE

Charles H Cargile, M D, Bentonville, Ark

This instrument is helpful in removing foreign bodies from the nose It is composed of two parts or shafts One is smaller so as to pass through the other hollow one and rotate within it The distal extremity of each terminates in a very delicate hook very like a strabismus hook These are so adjusted that when closed they lie in lateral apposition with a combined thickness not greater than that of a strabismus hook



Instrument for removing foreign bodies from the nose *a* open *b* closed

The proximal end of the smaller shaft projects slightly beyond that of the larger hollow one and terminates in an enlargement to be grasped by the fingers during rotation

In using the hooks are carefully slipped closed (rotated into lateral apposition) along the septum or lateral wall of the nasal passage until beyond the foreign body Then the whole instrument is slightly rotated until behind it This done the hooks or tines are separated in proportion to the size of the body to be withdrawn along with the instrument

The only objection is the cost of the instrument, which is greater because it is necessarily hand made

Therapeutics

'COLDS'

"Colds," also called by various other names, such as coryza acute rhinitis and acute nasopharyngitis, are without doubt the most common and least severe of all infections As a rule, "colds" occur in epidemics, almost always being contracted by one person from another Perhaps the commonest way of spreading is by sneezing, in which manner the agents of the infection are disseminated into the surrounding atmosphere Aside from this, experiments have demonstrated that there are organisms residing in the nasopharyngeal passages which may produce the infection in others by inoculation

Tunnicliff,[1] in the acute and chronic forms of rhinitis, isolated an anaerobic gram-negative bacillus, which she named the *Bacillus rhinitis* In a large percentage of cases this organism was found in pure culture It was also found in about 90 per cent of the cases of chronic rhinitis in which there was a mucoid discharge That this organism was the etiologic factor in acute rhinitis was shown by the production of the condition after experimental inoculation and by recovering the organism in pure form from those infected by the inoculation Kruse,[2] working along the same lines, was able to demonstrate that when the secretions from the discharge in cases of acute rhinitis were taken and diluted even as much as twenty times, and then filtered, the filtrate inoculated into the noses of healthy people produced typical cases of acute rhinitis As a result of this he concluded that the acute rhinitis was caused by an invisible and filterable virus, since the filtrate when cultured remained sterile

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[1] Tunnicliff Jour Infect Dis 1913 xiii 283

[2] Kruse Munchen med Wchnschr, 1914 lxi 1547

More recently Foster[3] repeated Kruse's experiments and obtained similar results He, however, went further, and, using Noguchi's method for growing the parasite of rabies and the organism of poliomyelitis, was able to obtain from the filtrate an organism which, when inoculated into the noses of eleven soldiers, produced a typical condition of acute rhinitis in all of them Cultures made from the nasal secretions of these also showed the same growth on mediums Foster, examining the growth under the dark-field microscope, states that there were "myriads of extremely active minute bodies occurring singly, in pairs and in agglomerations of varying magnitude These did not stain satisfactorily with the usual stains"

As a rule, for the development of a "cold," the soil on which the infective agent will grow, that is, the nasopharyngeal passages, must first be prepared This is usually effected by the exposure of the individual to varying changes in the temperature of the atmosphere by which the person is surrounded Thus, it is still commonly believed by some that drafts per se, alone, are responsible for the "cold," or that it is produced in persons whose feet become cold or chilled from the cold or damp ground Probably there is a dryness of the throat and nasopharynx, and as soon as the normal protecting nasal secretions are absent, the infecting organisms obtain a foothold, and the characteristic symptoms follow

Although some "colds" may be more severe than others, and even though some may be readily aborted, even in twenty-four hours, nevertheless, the symptoms in all cases at the onset are usually the same The incubation period, according to Foster,[3] is from eight to thirty hours

The "cold" begins with dryness of the nose and throat As dryness produces considerable irritation, there is a frequent desire to sneeze At this stage, recovery may occur after a few hours rest As a rule, this stage is followed by slight constitutional sensations of an uncomfortable nature There may be chilliness and flushing, and a slight rise in temperature, as high as 100 F The dryness is followed by a congestion of the nasal mucosa, with swelling The nose feels blocked and stuffy The sense of smell is lost, and even the taste may be abolished, or perverted There is also present a dull headache over the frontal sinuses, and a heaviness of the head In a few hours, or usually on the day following the onset, there appears a marked nasal discharge which seems to flow incessantly This discharge is thin and watery, and of an irritating nature and results in an eczematous condition and soreness of the nares and the alae nasi

The inflammation may spread to the eyes, the conjunctivae of which become reddened and inflamed, and the eyes feel hot and irritated At times the infection, or at least the irritation, will extend up the eustachian tubes to the middle ear, and will produce tinnitus aurium, with slight deafness Tonsillitis and bronchitis often follow in the wake of acute rhinitis By the time that this occurs the original inflammation may begin to subside, the symptoms of the rhinitis persisting from three to six days

There may be a mixed infection in which some organisms other than the one which produced the primary symptoms will predominate When this occurs, the discharge will change from a thin, watery one to a mucopurulent, or even to a purulent discharge of a dirty greenish color From the discharge can be isolated the commoner organisms, such as the *Micrococcus catarrhalis, Streptococcus viridans, Streptococcus hemolyticus*, the pneumococcus, and even the *Bacillus influenzae* When such a discharge does occur, its duration cannot be definitely foretold

The treatment of "colds" depends on the stage of the infection at which the treatment is to be started At the onset, when the mucosa is dry and free from secretions, a purge should be given A hot bath may also be taken at this time This should be followed by rest in bed An ice bag to the head and a hot-water bag to the feet sometimes aid in giving relief, as do also a full hot tub bath and a large glass of hot lemonade before going to bed For local relief of the nose condition, a spray of epinephrin 1 10,000 may be used

When there is a profuse watery discharge, with or without a sore throat, atropin by mouth can be given until there occurs a dryness of the nose and throat Hot alkaline nasal irrigations will be found useful If the discharge is mucopurulent, hot alkaline nasal douches and the application of a 1 per cent solution of cocain hydrochlorid to the nares may be tried Sprays of liquid petrolatum are also soothing The diet consists mainly of milk and eggs An alcohol rub three times a day seems to have a beneficial action, and for further antiseptic action by way of the circulatory system, hexamethylenamin, 5 grains, internally, three times a day, may be prescribed

An associated tonsillitis or pharyngitis of course requires appropriate treatment

Vaccines in "colds" have not demonstrated their usefulness, probably because the vaccine has not been prepared from the true infecting organisms Mixed vaccines have also been given from a prophylactic standpoint, and favorable results have been reported in those who have previously had frequent attacks of "colds" There is, however, no good proof that such preventive vaccinations are often of benefit It is possible that a vaccine prepared from the organism described by Foster might be used to immunize an individual against future attacks of "colds"

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLE HAS BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION W A PUCKNER, SECRETARY

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[3] Foster G B The Etiology of Common Colds THE JOURNAL A M A, April 15, 1916 p 1180

THE JOURNAL OF THE
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SATURDAY OCTOBER 21, 1916

RESISTANCE TO INFECTION

The accomplishment of an infection, Zinsser[1] writes, is not determined merely by the fact that a micro-organism of a pathogenic species finds lodgment in or on the body of a susceptible individual, but it is further necessary that the invading germ shall be capable of maintaining itself, multiplying and functionating within the new environment An infection, then, or an infectious disease, is the product of the two factors, invading germ and invaded subject, each factor itself influenced by a number of secondary modifying circumstances, and both influenced materially by such fortuitous conditions as the number or dose of the infecting bacteria, their path of entrance into the body, and the environmental conditions under which the struggle is maintained

This struggle between the host and the invading bacteria represents a situation in which no adaptation has taken place The conflict may result in a local or systemic manifestation which constitutes disease In the majority of cases it becomes "mild and locally limited if the protective powers far outweigh the invasive powers of the micro-organisms, violent if the balance is reversed" If it were possible to discover the various means by which the organism so often successfully exerts its powers of resistance and secures a recovery or immunity from disease, the prospect of therapeutic advance in the management of infections would doubtless be greatly enhanced For this reason there seems at present to be in experimental medicine a growing tendency to study the precise fate of bacteria under conditions in which they experience varying degrees of resistance

The recent studies of Bull[2] at the Rockefeller Institute for Medical Research, New York are furnishing interesting facts in regard to the deportment of the micro-organisms in the circulation It now appears quite probable that the power of the blood to cause agglutination determines, in large measure, whether after their direct introduction in an experimental way the bacteria are to be removed promptly from the circulation and septicemia avoided, or whether they are to remain there and produce a blood infection An inverse ratio seems to exist between the power to produce septicemia and the degree of agglutination of the infection bacteria in the circulation of the host Thus, according to Bull, virulent pneumococci, dysentery bacilli of the Shiga type, and virulent influenza bacilli do not agglutinate when injected into the circulation of normal rabbits, while typhoid bacilli, dysentery bacilli of the Flexner group, and nonvirulent influenza bacilli are agglutinated immediately after entering the circulation of these animals On the other hand, an intravenous injection of a small quantity of specific immune serums causes an instantaneous agglutination of pneumococci and Shiga dysentery bacilli in the circulation of infected rabbits The bacterial clumps accumulate in the organs in which they are phagocyted

In this way it appears that active immunity generally insures the agglutination of specific bacteria when they are introduced into the circulation The degree of agglutination and opsonization of bacteria, whereby they are readily mastered by the protective phagocytes available, within the body, is inversely parallel to the infectiousness of many bacteria for the host Stryker[3] has recently ascertained that the growth of virulent pneumococci in homologous immune serum produces variations in agglutinability, decrease in virulence, inhibition of capsule formation, increase in phagocytability with normal serum, and change in absorption power and antigenic properties Very few passages through the animal body suffice, however, to induce a reversion to the original type Bull conservatively points out that the fact of the prominent role or even decisive part played by agglutinins and opsonins in the circulation of infected individuals need not imply that these are the only immunity forces at work or available

THE FALLING DEATH RATE AND LENGTHENING OF LIFE

The baby of today has the prospect of a much longer average lifetime than did the baby of two generations ago The average duration of life and the death rate are two complementary magnitudes[4] If the death rate could be accurately established for any period, it would be an easy matter to calculate the span of life in a population in which the annual number of deaths equals the annual number of births, and without emigration or immigration Such equalities exist in few countries, least of all in the United States It was calculated by Willcox[5] some years ago that the annual death rate in the United States was about 18 per thousand On this basis the average length of life would be fifty-five years, obviously a rather high estimate for this country, involving errors of assumption which cannot readily be eliminated from the statistical calculations For this reason it is ordinarily preferable to be satisfied with a statement of the "crude death rate," or the quotient of the number of deaths in the year divided by the population Such figures are easier to obtain

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[1] Zinsser H Infection and Resistance An Exposition of the Biological Phenomena Underlying the Occurrence of Infection and the Recovery of the Animal Body from Infectious Disease New York 1914 p 3

[2] Bull C G Jour Exper Med 1915 xxii 484 Further Observations on the Agglutination of Bacteria in Vivo ibid 1916 xxiv 25

[3] Stryker Laura M Variations in the Pneumococcus Induced by Growth in Immune Serum Jour Exper Med 1916 xxiv 49

[4] Fisher Irving Mortality Statistics of the U S Census American Economic Assn Monograph on the Federal Census 1899 p 160

[5] Willcox W F Death Rate of the United States in 1900 American Statistical Assn Publications x 155

In order to ascertain whether modern progress in the knowledge of sanitation and of personal and public hygiene has been attended with improvement in the death rate, it is worth while to turn back to some historical data regarding mortality The records of old cities show that a decided decrease in the death rate has steadily been going on In Table 1 are some illustrative figures for mortality in London [6]

TABLE 1—MORTALITY IN LONDON

Year	Rate per Thousand
1660 1679	50
1680 1728	80
1729 1780	40
1905	15 1

The statistics in Table 2 for the white population of typical American cities were collected by the actuary of a large American life insurance company

TABLE 2—MORTALITY OF WHITE POPULATION OF AMERICAN CITIES

Years	Death Rate per Thousand
1804 1825	24 6
1826-1850	25 7
1851 1863	28 3
1864 1875	25 4
1876 1888	22 9
1889 1901	21 0

An estimate of the death rate in the United States last year, based on reports from states and cities containing 67,000,000 persons, or more than two thirds of the entire population, has been placed at 13 5 per thousand The same source places the average rate at 16 2 during the period of five years which ended with 1905, and it has been falling ever since Gains in cities are most noticeable

There is, obviously, a limit to the increase in the length of human life, but there is reason to believe that the limit is still far off In seeking for the explanation of success in the conservation results of the past few generations as a guide to the efforts of the future, a medical investigator quite naturally turns to the accomplishments and the possibilities which redound to the credit of our profession and the sciences on which its work rests A layman may be inclined to conclude that the resources of hygiene have been unduly exploited It is wholesome, therefore, to read the editorial opinion of a prominent American daily newspaper

> The chief cause of the improvement has been progress in sanitation, in the use of those precautions and safeguards which are required for the prevention of diseases, especially those of an infectious character We have profited by the results of scientific inquiry as to the origin and transmission of such ailments Large and generous expenditures, with concerted effort, have cut down in a few years by more than one fifth the death rate for tuberculosis Health officers have the support of the people Pollution of water supplies at once excites public protest in these days, and there are few typhoid epidemics in comparison with the number twenty years ago The press is always on guard It will be admitted that its warnings and its constant dissemination of what may be called sanitary truths have been effective in promoting that death-rate reduction which official reports now disclose [7]

An enthusiast in the conservation movement has stated fifteen years as a safe minimum estimate of prolongation of life still possible This takes no account of future medical discoveries, and scarcely even reckons with the cumulative influence of present-day hygiene Fisher[8] maintains that the addition of fifteen years is only a first step He adds that if clean milk will prevent infantile diarrheal diseases, if clean water will prevent deaths from typhoid, and at the same time — according to Hazen's theorem — prevent two or three times as many other deaths, and if clean air will prevent tuberculosis, then it is evident that mere cleanliness in respect to these necessities will suffice to lengthen life by most if not all of the foregoing estimate Fifteen years, says Fisher, is merely the "ore in sight " If we will work for it, we may get an even richer prize

THE IMPROVEMENT OF STREAM-POLLUTION CONDITIONS

About half a century ago Lambert wrote "It costs no more to 'raise' a man capable of living for 80 years than it does to 'grow' one who has not the capacity of living to be 40 years old " [9] In the midst of present-day enthusiasm for the conservation of life and other natural resources we have come to appreciate how much potential value of life is now allowed to be wasted which could be conserved It is, however, one thing to recognize and admit the existence of a deplorable situation, and quite a different matter to find workable ways and means of combating it An expert has calculated that the actual economic saving annually possible in this country by preventing needless deaths, needless illness (serious and minor), and needless fatigue, is certainly far greater than one and a half billions, and may be three or more times as great [10] Generalizations of this sort, striking as they must be to any thoughtful individual, need to be supported by the evidence of actual conservation possibilities

The greatest menace to most modern water supplies lies in their pollution with human excreta The possibilities in this direction have become enormously extended by the installation of sewerage systems for cities and some smaller groups of individuals This procedure, which has been of incalculable benefit to the individual communities served, has in turn produced a new menace in an indirect way Public opinion has in the last generation become more and more insistent on the provision of adequate sewerage with universal house connections, but it has not awakened or has actually shown indifference to the far reaching consequences of the sewerage methods in operation Dr Frost[11] of the U S Public Health Service has presented the situation in this way

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[6] Farr Vital Statistics London 1885, p 131

[7] The Falling Death Rate editorial New York Times Sept 24 1916

[8] Fisher Irving Report on National Vitality Its Wastes and Conservation, Bull Committee of One Hundred on National Health, 1909, No 30 p 110

[9] Lambert T S Sources of Longevity New York 1869 p 6

[10] Fisher, I Bulletin of the Committee of One Hundred on National Health being a Report on National Vitality, Its Wastes and Conservation, Washington Government Printing Office July 1909 No 30, p 120

> Great as has been the effect of this improvement in the prevention of sewage-borne diseases, a just estimate of its influence is not to be based on this alone, but must take into account also the enormous social betterment resulting from the elimination of disgusting filth from the environment, the encouragement of more cleanly habits, and general elevation of ideals Nevertheless, a direct consequence of this great sanitary achievement has been greatly to increase the pollution of watercourses, for the simplest and most obvious means of disposing of sewage is to discharge it directly into a convenient body of surface water, and this has been a common practice Watercourses which previously were polluted with only such wastes as were thrown into them incidentally or washed in from the soil have now become much more grossly polluted by the discharge of fresh sewage from sewered communities

The conservation of public health, in the broadest sense, demands that the public water supplies must be protected from such dangerous contamination Efforts have not been directed to prevent all pollution since this result is at present practically impossible of accomplishment in many regions Where danger exists it has been found more suitable to purify water at a moderate cost by application of modern, scientific methods, including storage, sedimentation, precipitation, filtration, and disinfection by the use of calcium hypochlorite, liquid chlorin and other disinfectants, making it possible, at a moderate cost, to procure satisfactory, clean, and safe water supplies from dirty and dangerously polluted sources If this is not the ideal plan, it *nevertheless represents an enormous* temporary advance in the direction of safety

A single illustration of some specific and tangible accomplishment in this direction almost invariably lends weight to efforts at remedial action or legislation For this reason we refer in some detail to the results of a survey, by the Public Health Service and other authorities, of changes in relation to the public water supplies in the Ohio Basin, which is a fairly representative section of the United States It embraces the water supplies of about 6,300,000 people, of whom fully two thirds are using water from surface sources Approximately 3,500,000 are taking their water supplies from rivers, and 90 per cent of these are supplied with water more or less effectively purified by sedimentation, filtration, disinfection, or combinations of these processes, only 10 per cent using unpurified river waters Practically all the water-purification plants represented have been installed within the last twenty-five years, the majority within the last ten years, during which period the largest three plants on the watershed, those of Cincinnati, Louisville and Pittsburgh, have been put into operation

The effect of this plan of purification in the Ohio Basin on the conservation of life and health has been estimated by Frost[11] as follows Eleven of these cities, with a *total population of* 243,000 *in* 1914, were still, in that year, taking their water supplies from the same source as in 1906, with no purification The average typhoid death rate per hundred thousand in these cities was, in 1906, 76 8, and in 1914 approximately the same, 74 5 Sixteen other cities, including Pittsburgh, Cincinnati and Louisville, having in 1914 a population of 1,866,000, were in that year taking their water supplies from the same sources as in 1906, but with more or less effective purification The average typhoid death rate in these cities in 1906 was 90 5 per hundred thousand, and in 1914, 15 3 Had these cities in 1914 suffered the same typhoid death rate as in 1906, they would have registered 1,688 deaths from this cause instead of the 286 deaths actually recorded *Thus in a single and not unusual year there was an* indicated saving of 1,400 lives, due to the reduction in deaths from typhoid fever alone There is good reason to believe that the saving in nonfatal cases of typhoid fever amounted probably to not less than from 14,000 *to* 15,000 *Equally striking reductions in the* prevalence of this disease have followed immediately on purification of the water supply in scores of other cities with such regularity as to justify the opinion that in the cities cited the reduction in typhoid fever from 1906 to 1914 *must be attributed in large part* to improvement in their water supplies

Frost has pointed out that the pollution problem is increasing with the growth of communities in population, so that the purification plants and sewage disposal works are likely to become overtaxed and unable to meet the needs in individual cases A slightly overburdened plant may be no less a menace than exists in the presence of gross pollution As natural agencies are made to cooperate in the purification methods, their limitations must be ascertained and dealt with It is useless to invest large sums in purification schemes or plan extensive works for the improvement of stream pollution without knowing what returns may be expected The first requisite, in the control of stream pollution, therefore, is a closer and broader study of the conditions of pollution existing in the rivers of the country, of the fundamental factors that influence these conditions, and, above all, of their effects on health Without such studies there can be no accurate knowledge as to the necessity for remedial measures, and no reliable estimate of the influence of proposed measures in protecting the public health

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[11] Frost W H The Sewage Pollution of Streams Its Relation to the Public Health Public Health Reports 1916 xxxi 2486

THE PROTEIN-SPARING ACTION OF CARBOHYDRATES

It is well known that the non-nitrogenous foodstuffs may spare body protein The carbohydrates are unquestionably more efficient as protein sparers than are fats The starvation output of nitrogenous waste products, or at least of urea, can be notably diminished by the ingestion of either of the non-nitrogenous nutrients mentioned, though the superiority of the carbohydrates in depressing the loss of nitrogen is always manifestly greater If the carbohydrates are omitted from the diet or even replaced by fat, the effect on the nitrogen output is promptly seen

Various theories have been proposed to explain this unique function of the carbohydrates in nutrition One view has maintained that a certain concentration of blood sugar is always necessary for proper maintenance of physiologic activities This sugar can be produced from proteins if carbohydrates are not available directly, and since, in the absence of carbohydrates, under physiologic conditions fats cannot well supply this want, proteins are broken down to yield the sugar which is lacking The result is an increase in the nitrogen output in carbohydrate starvation

Another view lately championed by Cathcart[1] of Glasgow and Janney[2] of New York postulates that carbohydrate is essential to protein synthesis There is no doubt at present that sugar is not oxidized directly in the metabolism of the organism, but is rather dissociated in a definite way into simpler derivatives, of which methyl glyoxal, CH_3 CO CHO, lactic acid, CH_3 CHOH COOH, and pyruvic acid, CH_3 CO COOH, are the most interesting possibilities There is evidence that these compounds derived from sugars can in turn be converted into sugar in the diabetic individual They can, accordingly, be concerned in the synthesis as well as the disintegration of the sugar molecule But there is also some evidence now available, largely from perfusion experiments on surviving isolated organs, that both pyruvic and lactic acids can be converted into the amino acid alanin, that is, they can add nitrogen under conditions approximating physiologic possibilities

Kocher[3] has recently reminded us that if this process of retaining nitrogen by dissociation products of sugar to form new amino acids, and hence proteins, occurs on a large scale in the body, it will explain why ingestion of carbohydrates spares body protein To test this point he has undertaken a comparison of the sparing effects of ingesting lactic and pyruvic acids in contrast with equivalent amounts of undissociated carbohydrates, like sucrose, on the nitrogen output The outcome of these experiments, conducted at the George W Hooper Foundation for Medical Research of the University of California, indicates that lactic acid exerts practically the same sparing action on protein metabolism as do carbohydrates The sparing action of pyruvic acid also is very distinct, but less marked than that following sugar In view of what has already been mentioned regarding the possibility of adding on ammonia to the structures of the sugar derivatives to form alanin, it is readily conceivable that, when this process is operative, nitrogen arising from the catabolism of body proteins, instead of being promptly excreted, is utilized to synthesize new protein This is not a new conception of metabolism, but Kocher's work gives added support to the possibility that the fixing of catabolized nitrogen by the dissociation products of glucose to form new proteins is the true mechanism of the sparing effect of feeding carbohydrates on the nitrogen output

THE LYMPHATIC SYSTEM

A medical man is frequently brought into relation with situations which remind him of the existence and functional importance of that vague entity entitled the lymphatic system During his student days its structure and physiologic duties were defined in rather indefinite terms, and the uncertainty as to precisely what the lymphatics consist of, where their ramifications proceed, and how they assist in the undoubtedly useful regulative performances which are ascribed to them seems to persist It is a decided advantage, therefore, to have an opportunity to review the status of the subject and to have the timely problem of the lymphatic system presented in an expert way This has recently been done by Dr Florence R Sabin[1]

The conception of the structure and particularly the origin of the lymphatic system has undergone profound changes in recent years How confused the ideas of the past generation have been is attested by the diversity of nomenclature, for all too often a new word is a convenient cloak for ignorance Lymph radicles, lymph rootlets, lymph spaces, parenchymal spaces, tissue spaces — each term has had its vogue In early times the lymphatics were thought to begin in wide mouths in the walls of the various cavities of the body, but the openings or stomata proved to be difficult to find and identify The time-honored conception of the lymphatic system presented the idea of "hazy lymphatic capillaries that faded off indefinitely through hypothetical lymph radicles into the tissue spaces"

The more recent investigations, to which American students of anatomy have contributed in no small measure, serve to emphasize more clearly than ever before the independent identity of the tissue spaces in distinction from the lymphatic vessels The old hypothe-

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[1] Cathcart E P The Physiology of Protein Metabolism London 1912, p 121
[2] Janney N W Jour Biol Chem 1916 xxiv 30
[3] Kocher, R A The Mechanism of the Sparing Action of Carbohydrates on Protein Metabolism Jour Biol Chem 1916 xxv 571

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[1] Sabin Florence R The Method of Growth of the Lymphatic System, Science Aug 4, 1916 p 145

sis of an open system is giving way to the demonstration of distinct closed systems that contain fluid broadly termed lymph We may now recognize blood capillaries, lymph capillaries and tissue spaces, each distinct and completely lined by endothelium, both blood and lymph capillaries being related to the tissue spaces in comparable ways These regions are filled, specifically speaking, with plasma, lymph and tissue fluid, respectively The newly dignified tissue spaces are discussed by Dr Sabin as follows It is well known that the plasma of the blood is constantly exuded from the blood vessels into the tissue spaces, so that all the cells of the supporting tissues, as well as the special cells of each organ, are bathed in fluid Moreover, it is obvious that with all the varying activities of the cells of the body, the fluid becomes laden with different nutritive and with different stimulative substances and with different waste products, so that it varies widely in its composition The subject of tissue spaces — meaning not empty spaces, but spaces which always contain fluid — is by no means a simple one There are primarily the general, small spaces between all of the fibers and cells of the connective tissues and between the parenchyma of each organ and its supporting tissues, but there are also special systems of great spaces, which arise from the small spaces by a definite method, have a definite structure, and contain a fluid which is different from the other fluids in the body — such, for example, as the subarachnoid spaces, which surround the central nervous system Other great systems of spaces are found in the internal ear and in the eye The perivascular tissue spaces are likewise conceived to be independent of the lymphatics proper, although the chains of spaces along the pathways of certain blood vessels have often in the past been termed perivascular lymphatics because they were apparently arranged in sufficiently definite lines to resemble lymphatic channels

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> Man appears to be built to feed on fruits, roots and other succulent parts of vegetables His short and not very strong jaws on the one hand, his canines equal to the other teeth and his tuberous molars on the other hand would not permit him to feed on grass or devour flesh[1]

In contrast with such statements, Lyon[2] of the George Washington University has presented strong and somewhat unique zoologic evidence that man and his ancestors have long indulged in three forms of animal food which today are commonly found in markets His argument is based on the recognized fact that three well known large tapeworm parasites of man exhibit a rather high degree of differentiation and a perfect adaptation to their definite and intermediate hosts The definite host of the beef tapeworm, *Taenia saginata,* and of the pork tapeworm, *Taenia solium,* is man, and probably man alone Lyon contends that both of these tapeworms are rather highly specialized and do not appear to be readily adaptable to other hosts The conclusion seems clear that man has been eating cattle and pigs or their immediate ancestors, and perhaps himself, for as many ages as needed for these tapeworms to attain their present degree of differentiation Lyon adds that we have no evidence that species of any kind are rapidly produced, and the parasites have probably had as slow an evolution as man himself The fish tapeworm has other definite hosts than man, notably the dog, and the evidence is not conclusive that early man was piscivorous The ease, however, with which man becomes infested with this parasite might indicate that he had eaten uncooked fish for a long period As the trichina seems to thrive easily on almost any mammalian host, little importance can be attached to any apparent adaptability of the parasite *Trichina spiralis* for man and pigs, nor can this be taken as an indication of a pork diet for early man Lyon has further ventured to suggest that it is not beyond possibility that the acquirement of a meat diet by the vegetarian pre-men may by improvement of nutrition, by shortening of digestive processes, and by stimulating properties of proteins and their split products have played an important part in man's evolution over his vegetarian competitors Such speculations take us far into the realm of unproved fancies

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[1] Buttner, J L A Fleshless Diet New York F A Stokes Company, 1910 p 5

[2] Lyon, M W Jr The Animal Diet of Early Man Science 1916 xliv 427

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In his report on the treatment of acute poliomyelitis with the serum of persons who have passed through an attack of the disease, Wells[1] emphasizes why it may be more advantageous to inject the serum intravenously (or intramuscularly) than intraspinally While it is true that the nature and distribution of the lesions in poliomyelitis point to a hematogenous infection, and that for this reason the intravenous injection of immune serum, which it is supposed acts directly on the cause of the disease, appears to be indicated, it may be well to replace at the same time some of the cerebrospinal fluid with serum In that way the essential localization of the disease would be attacked, so to speak, from all sides Of course one great advantage of the intravenous route is that it permits the introduction of a practically unlimited amount of serum and thus a much greater quantity of the specific antibodies than possible by the intraspinal injection As to the results of the injection of immune human serum, it can be said that those who have watched the effects closely appear to have been impressed with a prompt and rapid general improvement, especially in severe cases when treated early At present, when this is the only form of anything like a specific treatment at hand, it should be used early and freely whenever possible

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Undoubtedly the report by Mathers,[2] in which he briefly announced his isolation of a peculiar pleomorphic coccus from the brain and cord after death from poliomyelitis, a coccus that caused paralysis in rabbits and monkeys, was read with much skepticism by many who are familiar with the previous work on the etiology of poliomyelitis Had it not been established beyond all doubt, they asked, that poliomyelitis is caused by a filterable virus, practically ultramicroscopic? And is it not a fact that, in all the recent investigations into the causation of this disease, no mention even is made of any organism which can be seen and grown so easily as the one described by Mathers? But totally unexpected though they may have been, Mathers' results did not have to wait long for confirmation by other and independent workers, as shown by the reports of the splendid work by Rosenow and his co-workers[3] and by that of Nuzum and Herzog[4] in this issue of The Journal The fact that what seems like the same streptococcus-like micrococcus with the peculiar small and large forms has been isolated from the brain and cord in altogether about thirty cases of typical poliomyelitis in two widely separated cities by independent observers certainly must be accepted as sufficient evidence that the microorganism plays such part in at least the current epidemic of poliomyelitis as to demand the closest and most exhaustive study Indeed, when we consider the reported results of the various inoculation experiments on animals with the cultures obtained from the brain and cord, as well as with those obtained by Rosenow and his associates from the throat and tonsils in a large number of cases of poliomyelitis, experiments with both unfiltered and filtered materials, there seems to be no escape from the general conclusion that the organism either is a secondary invader which in cultures may be more or less closely associated with the independent virus of poliomyelitis, or that it is itself the cause of poliomyelitis and capable of existing in filterable and nonfilterable forms It would be interesting to discuss in detail the various facts and considerations which appear to favor the one and the other of these two possibilities, but it is doubtful whether such discussion would promote the final solution of the etiologic problem of poliomyelitis as now presented We must await the results of further experiment and study

ACTIVATED SLUDGE

The utilization of the nitrogen in sewage by the so-called activated sludge process is proving one of the most promising of recent methods of sewage treatment As is well known, the disposition of sludge has long been a stumbling block in various processes of sewage disposal This is chiefly because the expense of separating the solid matter of sewage from the water with which it is associated is so great as to overbalance any fertilizing value the sludge itself might possess It is not found economical in most instances to dry or press the sludge and sell it for fertilizer, so that the removal of the sludge entails additional expense rather than revenue Another reason for the failure to utilize sludge has been that when any separation of the solid matter is carried out, much of the organic matter of the sewage remains behind in the fluid portion Simple sedimentation removes only about one third of the total organic matter in ordinary sewage, and chemical precipitation only about one half It is considered an advantageous feature of the activated sludge process that the colloidal and suspended matters of the sewage are more highly concentrated in the sludge According to recent experiments in Milwaukee,[5] about 70 per cent, or more than two thirds of the organic matter, is removed by the activated sludge method The result appears to be that sis of an open system is giving way to the demonstration of distinct closed systems that contain fluid broadly termed lymph We may now recognize blood capillaries, lymph capillaries and tissue spaces, each distinct and completely lined by endothelium, both blood and lymph capillaries being related to the tissue spaces in comparable ways These regions are filled, specifically speaking, with plasma, lymph and tissue fluid, respectively The newly dignified tissue spaces are discussed by Dr Sabin as follows It is well known that the plasma of the blood is constantly exuded from the blood vessels into the tissue spaces, so that all the cells of the supporting tissues, as well as the special cells of each organ, are bathed in fluid Moreover, it is obvious that with all the varying activities of the cells of the body, the fluid becomes laden with different nutritive and with different stimulative substances and with different waste products, so that it varies widely in its composition The subject of tissue spaces — meaning not empty spaces, but spaces which always contain fluid — is by no means a simple one There are primarily the general, small spaces between all of the fibers and cells of the connective tissues and between the parenchyma of each organ and its supporting tissues, but there are also special systems of great spaces, which arise from the small spaces by a definite method, have a definite structure, and contain a fluid which is different from the other fluids in the body — such, for example, as the subarachnoid spaces, which surround the central nervous system Other great systems of spaces are found in the internal ear and in the eye The perivascular tissue spaces are likewise conceived to be independent of the lymphatics proper, although the chains of spaces along the pathways of certain blood vessels have often in the past been termed perivascular lymphatics because they were apparently arranged in sufficiently definite lines to resemble lymphatic channels

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[1] Wells C W Immune Human Serum in the Treatment of Acute Poliomyelitis this issue p 1211

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[4] Nuzum John W, and Herzog Maximilian Experimental Studies in the Etiology of Epidemic Poliomyelitis this issue p 1205

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[5] Copeland W R Engineering News Oct 5 1916

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest such as relate to society activities new hospitals education, public health, etc)

DISTRICT OF COLUMBIA

Chamber of Commerce Protests Appointments of Nonresidents—Announcement having been made that in filling existing vacancies in the positions of chief food inspector and chief medical and sanitary inspector of public schools, appointments would be made without reference to residence in the District of Columbia, the Washington Chamber of Commerce adopted a resolution that said positions should be filled from among the many duly qualified physicians who are bona fide residents of the District

Medical Inspector Dies of Infantile Paralysis—Dr Arthur Le Roy Hunt, a medical inspector in the service of the health department, died, October 7, of infantile paralysis believed to have been contracted in the line of duty While Dr Hunt had not been exposed to any known case of infantile paralysis since the middle of July, yet his daily duties had brought him into contact with many children who had come into the District of Columbia from infected areas, with certificates from the local authorities purporting to show absence of exposure to infection Dr Hunt was one of the best known anesthetists in Washington

GEORGIA

Hospital Items—Dr Jefferson D Chason, Bainbridge, has awarded the contract for the erection of a hospital on Shotwell Street, to cost $45 000 The hospital will have thirty rooms for patients in addition to the operating rooms, public wards and nurses' quarters——The annex to the Columbus City Hospital was opened for the inspection of the public, August 17 The dedicatory speech was made by Rev J W Howard The new building is three stories in height, and will be used for a contagious disease ward and for negro patients——A building permit has been issued for the new Macon City Hospital which is to cost $80,000, and work on the foundation has already been commenced The three hospital buildings are to be completed within eight months The main building will be a five-story structure with balconies on each floor and a roof ward There will also be a service building, a three-story structure with a free clinic or outpatient department, and dispensary for both white and colored patients The upper two floors will contain wards for negroes It is expected that the cornerstone will be laid the latter part of this month——LaGrange will soon have a city hospital Mr J E Dunson, president of the LaGrange Banking & Trust Co, willed the city $10,000, and $500 a year for five years for its support, provided the city would give a like amount——The LaGrange Sanatorium, valued at $30,000, has been bought, the city giving $10,000 and Dr and Mrs Henry R Slack, LaGrange, the remaining $10,000 to complete the purchase Possession will be given to the city, Jan 1, 1917 The hospital will have forty beds and a negro ward

IDAHO

New Officers—At the annual meeting of the Idaho State Medical Association, held at Twin Falls, October 5 and 6, the following officers were elected president, Dr Charles S Moody, Hope, vice president, Dr Albert F McClusky, Buhl, secretary, Dr Edward E Maxy, Boise (holdover), delegate to the American Medical Association, Dr Charles R Scott, Twin Falls, alternate, Dr Leonard E Hanson, Wallace Sand Point was fixed on as the place of meeting for 1917, and the meeting will be held in the latter part of June or early in July, the exact date not yet being fixed

ILLINOIS

New Sanatorium Opened—The Municipal Tuberculosis Sanatorium at Rock Island was opened, October 19, and a reception was given in the afternoon and evening

Diphtheria in State School and Colony—The State School and Colony of Lincoln reports nine new cases of diphtheria October 11, making a total of nineteen One death has thus far been reported

Southern Illinois Medical Association—The forty-second annual meeting of the Southern Illinois Medical Association will be held at Benton, November 2 and 3, under the presidency of Andrew J Butner, Harrisburg

Hospital Auxiliary Formed—The Mary Thompson Hospital Auxiliary has been formed with Mrs George Patrick, Wheaton, president, and Dr Goldye Hoffman as a vice president The association hopes to do much to perpetuate the work of the founder of the hospital, the late Dr Mary Thompson

Personal—Dr James W Pettit was elected president of the Mississippi Valley Sanatorium Association, at the meeting of the Mississippi Valley Conference on Tuberculosis, October 7——Dr Charles H Starkel, Belleville, chief surgeon of the Southern Railway Company, entertained the members of the staff of the railway at a dinner at the St Clair Country Club, October 3

Chicago

New Dean for Northwestern—The resignation of Dr Arthur R Edwards, as dean of Northwestern University Medical School, was accepted by the trustees of Northwestern University, October 17 Arthur I Kendall, professor of bacteriology, was made acting dean

Personal—Dr Julius H Hess has been appointed professor of pediatrics and head of the division of pediatrics in the University of Illinois College of Medicine——Dr Gilbert M Loewe who has been working under the German Red Cross at Naumburg, Germany, for eight months past, has returned home——Dr Franklin H Martin has been appointed a member of the advisory commission to be associated with the council of national defense

MARYLAND

Personal—Dr J Hubert Wade has been appointed chairman of the Penal Board of Control——Dr William H Welch has returned from Europe——Dr John H Von Dreele, health warden of the thirteenth ward of Baltimore, has resigned——Dr James J Mills Baltimore, has returned from France——Dr Grover A C Stem, Baltimore, who is on duty with the German army on the Eastern front, has been given the iron cross by the emperor

Increase in Infantile Paralysis—The total number of cases of poliomyelitis for the week exceeded forty-five, the highest number on record since the beginning of the outbreak With the development of this number of new positive cases, the health department has more patients than it can care for, the Children's Hospital School, Sydenham Hospital, and the Harriet Lane Home being crowded Arrangements have been made with the Kernan Hospital for ten additional beds and for as many at the Garrett Hospital as can be obtained At present there are sixty-one cases at the Children's Hospital School There is a slight epidemic of the disease in Garrett County, several new cases having been reported to the state department of health during the week The situation in the counties was discussed at a recent general meeting of the state board of health, and Dr John S Fulton, the secretary of the board, was authorized to lift the quarantine whenever he felt conditions would justify it Children from other states are still barred from Maryland and in several instances have been turned back It is at present hoped that the schools will be open to the kindergarten and first six grades by November 10

NEW YORK

Italian Liner Quarantined—The Italian liner *Duca d'Aosta* which arrived from Naples, October 14 with 1 372 steerage passengers has been held in quarantine for twenty four hours on account of the illness of an immigrant who presented symptoms suggestive of Asiatic cholera

Lessons in Hygiene—The New York County Chapter of the American Red Cross has opened a teaching center at 3 East Fifty-Sixth Street where classes in elementary hygiene and care of the sick first aid to the injured home dietetics and the making of surgical dressings are held daily

New York City

Poliomyelitis—October 14 there were fifteen new cases of poliomyelitis reported in Greater New York with four deaths The number of cases to that date has been 9 202 with 2 356 deaths and there were 1 136 patients in hospital on October 14——On the recommendation of Senior Surgeon Charles E Banks, U S P H S in charge of inspection in New York Surgeon General Blue has ordered the federal inspection of travelers from New York to be discontinued

Police Laboratories Again Opened—Funds have been contributed which make possible the opening of the Psychopathic Laboratory at police headquarters This laboratory was opened last December in order to cull from the prisoners each day those who were mentally defective and to send them to suitable institutions The list of those subscribing to the support of this laboratory include Andrew Carnegie F W Vanderbilt, Daniel Guggenheim Mortimer L Schiff William Rockefeller and Mrs George B Alexander

Fireproof Garb for Children—Dr Charles F Pabst Coroners Physician of Brooklyn, declares that the statistics of the New York fire department show that 90 per cent of accidental and preventable fires during the past year were caused by children swinging cans filled with dried leaves and paper, and warns parents against allowing children to play with these portable fires He recommends that all children's clothing should be fireproofed and says this may be done by soaking any fabric for five minutes in a solution of ammonium phosphate, in the proportion of 1 pound to 2 quarts of water This will render any material fireproof until it is washed

Lectures—The Wesley M Carpenter lecture which was to have been delivered by the late Dr John B Murphy, Chicago, was delivered by his collaborator Dr Philip H Kreuscher who presented the joint work of Dr Murphy and himself on "A Clinical and Experimental Study of the Metastatic Arthritides' based on 800 clinical cases and illustrated with lantern slides at the New York Academy of Medicine October 19 Dr George E Brewer also gave a brief appreciation of Dr Murphy and his place in American surgery ——The governors of the New York Skin and Cancer Hospital announce that the eighteenth series of clinical lectures on diseases of the skin will be delivered by Dr L Duncan Bulkley in the outpatient hall of the hospital on Wednesday afternoon at 4 15 beginning November 1

PENNSYLVANIA

Typhoid at Capital—Eight new cases of typhoid fever were reported in Harrisburg October 12 making a total of 122 since October 1 The city health officials today canceled the license of the Hershey Creamery Company forbidding the sale of its products here The source of the epidemic has been traced to the company s plant and products

Paralysis Bar Up Again—Public schools Sunday schools and moving picture places have been closed in Norwood Delaware County, following the discovery of a case of infantile paralysis in that town——The schools of Collingswood N J which have just been opened have been ordered closed again following the development of two cases there——Three new cases were reported in Philadelphia October 12 Four new cases were reported in districts outside of Philadelphia October 12 making a total of 1,722 since July 1 The list includes 905 in Philadelphia

Philadelphia

Rush Society Lecture—John Scott Haldane M D LL D, F R S, Fellow of New College, Oxford gave the first lecture in the Rush Society series for the present year in Thomson Hall College of Physicians, October 19 The subject was the New Physiology Professor Haldane is in this country at the invitation of Yale University to deliver the Silliman Lectures

Personal—Although Daniel Baugh resigned from the board of trustees of Jefferson Medical College and Hospital last summer the board thus far has not accepted his resignation His reason for resigning is his advanced age—he is now 80—and his desire to lessen his duties He has been a munificent benefactor to Jefferson and by his active participation in its management has been of great service to that institution In July this year he gave $100 000 for the endowment fund of the college——Dr Frank C Abbott, who has been serving in the Military Hospital in Vendome, France has returned home——Two Philadelphia physicians Lieuts Joseph V Klauder and John B Ludy M R C, U S Army have been placed on the active list and assigned to duty in the Hawaiian Department——Dr R Tait McKenzie, physical director of the University of Pennsylvania who has been in England for the past year serving as a major in the Medical Corps of the British army has arrived in Philadelphia to resume his usual duties at the university——Dr Ardrey W Downs formerly professor of physiology at the Medico-Chirurgical College has accepted a position as head of the department of physiology at McGill University Montreal

WISCONSIN

Poliomyelitis in Wisconsin—According to the records of the state board of health 318 cases of infantile paralysis had been reported in Wisconsin up to September 30

Work of Rhinelander Laboratory—The new Rhinelander branch of the state department of hygiene is manufacturing antityphoid vaccine which it is sending to any physicians in its territory on request The laboratory is also prepared to make analyses of sputum the Widal test, water analysis and the like

University Dispensary Clinical School Opens—The dispensary clinical school of the Marquette University Medical Department reopened at Reservoir Avenue and Fourth Street Milwaukee September 25 A new feature will be a charge of 10 cents a visit for those who can pay it The dispensary will be open from 10 45 a m to 2 p m daily

Wisconsin Medical Women's Meeting—At the seventh annual meeting of the Wisconsin Medical Women s Society held in Milwaukee October 3 to 4, the following officers were elected president Dr Minnie M C Hopkins Oconto, vice president Dr Irene G Tomkiewicz, Milwaukee, secretary Dr Mary L Ewing Evansville, and treasurer, Dr Belle Mair Oshkosh

New State Society Officers—At the seventieth annual meeting of the State Medical Society of Wisconsin held in Madison October 4 to 6 the following officers were elected president Dr Hoyt E Dearholt Milwaukee, vice presidents, Drs John F Pember Janesville and Joseph F Smith Wausau secretary Dr L Rock Sleyster, Waupun and treasurer Dr Sidney S Hall Ripon, delegates to the American Medical Association Dr Horace M Brown, Milwaukee and the secretary

Health Movies—The Wisconsin Anti-Tuberculosis Association has started a crusade throughout the rural districts of the state It has sent out a health wagon which carries sound health information moving pictures and a health exhibit The wagon is in charge of Ted Worle the originator of the flying squad of health of the association The beginning was made in Walworth County in August Rock County was the next to be invaded and the work will be continued as late into the fall as the weather conditions will permit The days are spent in traveling and visiting farm houses and distributing literature and in the evenings moving picture shows and lectures are given in the nearest villages or towns

GENERAL

Southern Medical Association—The annual meeting of the Southern Medical Association will be held in Atlanta, November 11 to 16 under the presidency of Dr Robert Wilson, Jr, Charleston S C

Erie Surgeons Elect—At the twenty-sixth annual meeting of the Erie Railway Surgeons Association held in New York Dr Chalmers D Morgan Galion Ohio, was elected president Dr Rufus B Harden Waverly, N Y, vice president and Dr Bertis R Wakeman Hornell N Y secretary and treasurer The next meeting will be held in Cleveland

National Medical Examination Day—Following a custom inaugurated last year the National Association for the Study and Prevention of Tuberculosis has set apart the week of December 3 to 10 as National Tuberculosis Week, and has fixed December 6 as National Medical Examination Day when physicians all over the United States will be requested to examine patients for tuberculosis free of charge

American College of Surgeons Meeting—The fifth meeting of the American College of Surgeons will be held in Philadelphia, Oct 27, 1916 One of the chief questions of interest to come up at this meeting will be the acceptance of a gift of from $300,000 to $500,000 from the John B Murphy Memorial Association of Chicago to build in Chicago the John B Murphy Memorial Hall of the American College of Surgeons

Accuracy of Certified Causes of Death—At the next meeting of the American Public Health Association, to be held in Cincinnati, October 24, the accuracy of certified causes of death will be one of the important subjects considered To the meeting will be submitted the report of a special committee, of which Dr Haven Emerson is chairman, appointed to consider the causes in question and their relation to mortality statistics and the 'International List of Causes of Death"

Impostor—D Appleton & Co, New York, announce that a man using the name B F Little has recently been collecting money from physicians in Oregon and Washington as their representative This man states that he is collecting for the Western Students Benefit Association of Denver Physicians in Puyallup, Wash, and Coquille, Ore, have been victimized Any payments made to this man, who has no connection whatever with their firm, are made at the risk of the physician making the payment

New Mississippi Valley Officers—At the annual meeting of the Mississippi Valley Medical Association, held at the Hotel Claypool, Indianapolis, October 10 to 12 Toledo, Ohio, was decided on as the place of meeting for 1917, and the following officers were elected president, Dr Channing W Barrett, Chicago, vice presidents, Drs Francis M Pottenger, Monrovia, Calif, and Frank B Wynn Indianapolis, secretary, Dr Henry Enos Tuley, Louisville, Ky (reelected), and treasurer, Dr S C Stanton, Chicago (reelected)

Southwestern Physicians Hold Meeting—The eleventh annual meeting of the Medical Association of the Southwest was held in Fort Smith Ark, October 2 to 4 Kansas City was selected as the next place of meeting and the following officers were elected president, Dr Everett S Lain Oklahoma City, vice presidents, Drs Howard L Snyder Winfield Kan, John H Thompson, Kansas City Mo, Matthew M Smith, Dallas, Texas, and Charles S Holt, Fort Smith, Ark, and secretary-treasurer, Dr Fred H Clark, El Reno Okla

Personal—Dr Joseph A Blake has recovered from his recent illness and has returned to work in his hospital——Dr Louis L Seaman arrived in New York on the Anchor liner *Cameronia,* October 9——Dr Paul J Werner sailed for Europe September 22, and will do war relief work in Heidelberg——Dr J Richard Kevin, major surgeon of the Twenty-Third Infantry, has returned from the border——Dr Francis LeRoy Satterlee, Jr, underwent an operation, October 10, for cancer contracted as a result of Roentgen-ray burns several years ago Dr Satterlee has been operated on twice and lost two phalanges of the second finger of the right hand

Poliomyelitis in Neighboring States—Up to the last available date of record there have been in New York and the adjacent states of New York, Connecticut, Massachusetts, New Jersey and Pennsylvania the following number of cases and deaths

	Cases	Deaths
New York City (Sept 30)	9 029	2 286
New York State exclusive of New York City (Sept 14)	2 785	318
Connecticut (Sept 18)	677	Not reported
Massachusetts (Sept 19)	678	95
New Jersey (Sept 19)	3 495	775
Pennsylvania (Sept 20)	1 278	313

Alvarenga Prize—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize amounting to $250, will be made on July 14, 1917, provided that an essay deemed worthy of the prize shall be offered The essays must be on the subject of medicine, and cannot have been published They must be typewritten, and if written in a language other than English should be accompanied by an English translation, and must be received by the secretary of the college on or before May 1, 1917 Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author The successful essay or a copy thereof shall remain in possession of the college, other essays will be returned on application within three months after the award The essays should be sent to Dr Francis R Packard, secretary of the College of Physicians of Philadelphia, 19 South Twenty-Second Street Philadelphia The Alvarenga prize was not awarded in 1916

Definition of Major Surgical Operation—Dr Francis D Patterson, chief of the Division of Industrial Hygiene and Engineering of the Department of Labor and Industry of Pennsylvania, forwards the following definition of the term "major surgical operation," as defined and issued by the Workmen's Compensation Board of that state, in interpreting the term as applied to cases under the compensation law of Pennsylvania

A major operation is a surgical procedure which entails immediate serious consequences to the patient and which requires skill and training to perform and includes 1 The setting of fractures of long bones and reducing of subluxations providing accuracy and efficiency of reduction be demonstrated by x ray taken before and after surgical treatment 2 All operative procedures other than finger and toe amputations cleansing draining and closing wounds evacuating pus by incisions the manipulating and reduction of uncomplicated dislocations the treatment of uncomplicated fractured ribs the removal of superficial foreign bodies from the eyes and the removal of subcutaneous foreign bodies

Note—All fees for a major operation shall be limited to such charges as are reasonable for similar treatment of injured persons of like standard of living in the same community and where such treatment is paid for by the injured person himself, the charges including hospital service to be paid by the employer not in any case to exceed the sum of $75

Bequests and Donations—The following bequests and donations have recently been announced

Beth Israel Hospital, New York, $10 000 by the will of Harris Wolff

Fresh Air Fund and Home for Crippled Children of St Thomas Protestant Church New York, and the Brooklyn Home for Consumptives each $5,000 by the will of Mrs Mary Stewart Bierstadt

Mount Sinai Hospital New York and the United Hebrew Charities, each $1 000 by the will of Dr Jacob H Frankenberg

White Plains Hospital New York $2 500 New York Society for Prevention of Cruelty to Children and New York Society for Suppression of Vice each $5,000

Norwegian Lutheran Deaconess Home and Hospital Chicago $10 000, subscription by the staff of the hospital $25 000 for the endowment of a ward by J P Hovland a donation of $9 100 by Mrs Elvira Lindeman and up to October 15 subscriptions of $26 450 and a fund of $1 000 by James A Patten

Minnesota State Anti Tuberculosis Fund $12 935 40 from the State Athletic Commission being 10 per cent of the receipts of legally authorized boxing matches in the state

To founding a chair of bacteriology in Jefferson Medical College one half of the trust fund remaining from the estate of Dr James Y Shearer, Sinking Springs Pa

Boston Dispensary and Massachusetts General Hospital each $3 000 by the will of Henry F Lynde Somerville

For erection of a home for nurses of La Crosse (Wis) Hospital two pieces of property and a donation of the necessary funds by Mrs Henry Gund

Peoria (Ill) Public Health Nursing Association $3 300 as a result of tag day

FOREIGN

Hospital Improvements—Government decrees in the Argentine have authorized the installation of water and sewerage services at a cost of $58 000 at the Hospital Comun Regional del Centro Bell-Ville, Cordoba, the construction of a building to be used for an electric plant at a cost of $15,000, and the installation of an electric plant and electric lighting at a cost of $48 900 for the Comision Asesora de Asilos y Hospitales Regionales, Buenos Aires, and the installation of water and sewerage works at the Sanatorio Nacional de Tuberculosos, Sante Maria, Cordoba, at an estimated cost of $62,700

Health for Siam—Mahildo, Prince of Songkla, brother of the King of Siam has come to America to take a course of instruction in public health at Harvard Medical School and the Massachusetts Institute of Technology, with the idea of a new regime in Siam in which the public health will be a serious concern of the government The care of the body will be taught in the schools, sanitary living will be made compulsory, preventable diseases will be prevented and by state control of marriage, the union of those not physically fit will be made impossible Prince Mahildo will maintain his headquarters in Gloucester

Restriction of Sale of Drugs in Spain to Pharmacies—According to the Madrid *Siglo Medico,* the sale of *medicamentos* is definitely and permanently forbidden outside of pharmacies and in these they are to be sold only on a *prescripcion facultativa* Pharmacists and their employees have their attention called in particular to ether, cocain and morphin which must not be dispensed without a corresponding prescription for them which insures their proper use Infringements of this regulation will be punished and those knowing of such infringements are urged to inform the state board of health (*Inspeccion provincial de Sanidad*)

German Journal Arrives—The *Therapeutische Monatshefte* for September arrived, October 8 the first German medical journal to reach The Journal since early last May It is the second issue of the *Monatshefte* to be received this year No 2 having been reviewed in The Journal April 15 p 1280 Before the war twenty six German journals were indexed regularly The German medical journals are being published regularly, as abstracts from them appear in the Scandinavian and Netherlands exchanges An Amsterdam exchange lists the contents of several of the German weeklies regularly Military surgery and hygiene crowd nearly every thing else out but both are conspicuous by their absence in the articles in the lone *Therapeutische Monatshefte* just received

Enforcement of Antimosquito Measures in Paris—The French Academie de medecine recently voted a resolution to the effect that the public health service should have added to the regulations in vogue against epidemics the right to enter private property and apply the measures necessary to eradicate mosquitoes Such regulations are in force in the French colonies and are rigidly applied but the population has no redress for the nuisance and danger of mosquitoes in France proper The war has brought many carriers of the *malaria parasite to France and a number of small foci of* true malaria have developed from them in regions where the anopheles abound Certain large private grounds in Paris have been a hotbed for mosquitoes this year but the police were powerless to interfere During the discussion it was stated that a house or factory left vacant for a month or so is liable to afford breeding places for mosquitoes in the water closet tanks and traps

Drugs in Italy—An important medical organization in Italy the Consiglio della Federazione degli Ordini dei Medici, recently adopted by unanimous vote a resolution calling on the government to aid the state and private laboratories and central military pharmacy in the production and sale of drugs, and to study ways and means to foster the best conditions in these lines The second half of the resolution urges physicians in their prescriptions to restrict themselves to drugs of well-recognized and practical efficiency and prescribe as little as possible of pharmaceutic specialties and specialized products The resolution concludes with the words "and deploring once more that certain physicians lend themselves to the study and boosting of pharmaceutical specialties of certain houses we call attention to the numerous resolutions adopted by the organization from time to time condemning any and every form of suspicious relations between physicians and pharmacists "

Deaths in the Profession Abroad—Dr William Appleton Meredith M B C M (Edin) 1872 F R C S (Eng) 1897, aged 68 a native of Philadelphia but for many years a resident of London well known as an abdominal surgeon and consulting surgeon to the Samaritan Free Hospital author of many monographs dealing with his specialty died in London, recently——P Lagleyze aged 61 professor of ophthalmology in the University of Buenos Aires and permanent member of the executive committee of the Pan-American medical congresses a frequent speaker at international medical and ophthalmologic congresses collaborator on various specialist and general medical journals and dean of the university He also took a leading part in fostering art and was a member of the National Art Commission He had published about 200 articles on the eye and devised a special technic for operations on cataract squint and ectropion——A Quiroga professor of chemistry at the same university, aged 65 and G Anschutz professor of bacteriology aged 37

CANADA

University News—Attendance and registration in the new postgraduate course in the University of Toronto in medicine is above the average this year It is expected that several students will yet enroll in the coming two weeks

Total Canadian Losses in War—Up to October 11, the total number of casualties among officers and men of the Canadian expeditionary forces has been 52 025 divided as follows killed in action 8 134, died of wounds 3 120, died of sickness 452 presumed dead 1 009 missing 1 372 and wounded, 37 939 The marked feature of this report is the very small number dying of sickness

Canadian Committee on Orthopedics—The Military Hospitals Commission has appointed the following committee on orthopedics to consider the matter of artificial limbs for soldiers Drs Clarence L Starr, Toronto, William E Gallie Toronto and Lieut Col A Mackenzie Forbes Montreal Dr Francis J Shepherd Montreal, and Dr Frederick E Thompson the medical superintendent of the commission, will be ex officio members of the committee

Personal—Dr William A C Macdonald Windsor, has been commissioned in the medical department of the Canadian army and will soon leave for France to assist in the eye and ear work in a Canadian base hospital——Maj Alex B Osborne Hamilton Ont has been promoted to lieutenant-colonel——Hon Dr Robert A Pyne, minister of education for Ontario has returned from England——Surg-Gen Carleton Jones director general of the Canadian Army Medical Services is returning to Ottawa, but this does not mean that General Jones is to leave the service

Hospital News—The proposed reorganization of the Canadian Army Medical Services in England and France and the segregation of Canadian soldiers in Canadian hospitals abroad is not to be accomplished without many vigorous protests The plan was very carefully considered by a committee of Canadian officers abroad consisting of Col Herbert A Bruce Toronto Col Charles Hunter, Winnipeg, Lieut-Col Walter McKeown Toronto, Lieut-Col Frank W E Wilson Niagara Falls Ont and Lieut-Col Wallace A Scott Toronto This committee considers that the work of caring for the wounded will be greatly facilitated thereby but the segregation is not to take place until the convalescent stage has been reached It is understood that the plan will result in saving many millions of dollars It is also claimed for the scheme that instead of 15 per cent returning to active service fully 65 per cent will be available——Queen s University Base Hospital in France is to move from Treport to Etaples as soon as the weather becomes too cold to stay in tents The hospital has treated over 4 000 patients in France——Lieut-Col John Stewart Halifax, N S, has been offered the position of head of the Duchess of Connaught Canadian Hospital at Cliveden England but has not yet accepted Dr Charles W F Gorrell Ottawa who was in charge of this hospital has resigned and is returning to Ottawa——The Military Hospital at Coburg Ont, has now in residence eighty returned soldiers——The new private pavilion of the Royal Victoria Hospital, Montreal, donated by Mr J K L Ross one of the directors of that institution, was formally opened by the Duke of Connaught during the past week This will make available about 200 additional beds in the Victoria Hospital proper for public ward patients——Reforms are to be instituted in the Toronto Base Military Hospital as the result of a recent official inquiry The inquiry elicited the fact that the medical staff under the command of Lieut-Col Thomas B Richardson has taken splendid care of their patients in this hospital Over 9 000 patients have been treated and the death rate has been less than one half of 1 per cent A complete quartermaster's staff will be appointed for base hospitals in the future

WAR NOTES

New Collapsible Stretcher—The Red Cross reports the use of a new collapsible stretcher which can be folded so compactly that it can be lowered into a trench and a wounded soldier placed in it thus obviating the necessity previously existing of lifting the wounded men out of trenches exposed to fire and then placing them on the ambulance stretchers

Ambulance for Balkans—The recently formed section of the American Ambulance Field Service which is to serve with the French army in the Balkans left Paris October 13 for the Saloniki front The section includes thirty ambulances with the necessary repair cars and kitchen car and the other accessories for service and is under the command of Lovering Hill of New York

OUR TROOPS ON THE BORDER

Health Report.—The weekly health report from the Southern department for the week ending September 30 shows the percentage of illness among the militia to have been 2 25 per cent with seven deaths For the same period the percentage of illness among the regulars was 3 42 per cent, with five deaths

National Guard Officers Resign—The resignations of the following officers of the Medical Corps of the Organized Militia have been accepted by the president, taking effect on the dates given below Lieut Harry C Guess, Buffalo Lieut Philip H Stephens Los Angeles September 15, Capt Dean F Winn, Atlanta Ga September 29 Maj Frank W Foxworthy *Indianapolis* September 16, Maj George H

Parmerlee, Detroit, August 31, Lieut William C Bell, Dearborn, Mich, September 1, Capt Arnt G Andersen, Minneapolis, September 25, Capt William O'G Quinby, Newark, N J, September 1, Lieut Sherwood V Whitbeck, Hudson, N Y September 30, Lieut George B Booth Toledo Ohio, September 1, Lieut Lemuel R Brigman, Cleveland, September 1, Maj Thomas G Aller and Lieut James B Rucker, Jr, both of Philadelphia August 30 and Maj Scurry H Terrell, Dallas, Texas, September 15 Maj W H Tukey, Boise, chief surgeon of the Idaho National Guard, resigned, September 15, to accept a new position in Idaho

PARIS LETTER

Paris, Sept 21, 1916

The War

TREATMENT OF WOUNDS OF THE VESSELS

At the Reunion medicale de la IV-e armee," Dr E Potherat surgeon of the Paris hospitals drew attention to cases of wounds of the greater vessels (of the neck and limbs) in which the hemorrhage is absent or very slight and which are compatible with life, these lesions sometimes cause so few signs that they may be altogether passed over until it happens that the obstacle to hemorrhage is removed and bleeding is suddenly produced in abundance and with the gravity ordinarily associated with the wound of a great vessel The obstacle to considerable primary hemorrhage which tends to mask the lesion is usually a small hemorrhage closely confined by the muscles and aponeuroses, this hematoma acts as a plug Sometimes the vascular coats are themselves the seat of this plug while at other times it is formed by the projectile The removal of a foreign body or the breaking down of clots by suppuration, and the freeing of the vasculonervous bundles by the removal of the hematoma or of the cellular tissue are the usual causes which provoke secondary hemorrhage with its consequences

This train of events is quite common in war wounds and in all parts of the body, and because of the danger to life which it constitutes it is necessary to bear it in mind Fatal hemorrhage may occur after a few hours, a few days or even, sometimes, a few weeks Whenever, therefore a projectile has penetrated the body in such a place or in such a direction that it must have passed through a vasculonervous bundle or in the immediate neighborhood of large vascular trunks even though the hemorrhage is moderate or nonexistent, even though no sign betrays the vascular lesion, it is necessary to follow the same line of conduct as if such a lesion were certain *The wound must therefore, be opened* up and the vessel exposed and carefully examined to make certain of its integrity if it is intact, to discover the lesion if it exists and to tie the vessel By opening up the wound and removing the clots and injured parts which are sure to necrose, this intervention, even though it may prove that the vessels are intact produces conditions favorable for repair, and if there is a vascular lesion, it safeguards the life of the patient

Drs Barbarin and Lerat communicated to the "Reunion medico-chirurgicale de la V-e armee" twenty-three cases of ligature of vessels twenty-two of them practiced three hours on the average after the infliction of the wound Of these twenty-three cases one terminated fatally In this instance death occurred suddenly a few moments after the ligature of the femoral vein in Hunter's canal At the necropsy, numerous infarcts were found in the right lung In the twenty-two other cases amputation was required in three, and in one of these it was necessitated solely by the bony and articular lesions, the ligature of the anterior tibial artery having nothing to do with it In the nineteen remaining cases, the postoperative condition was good, and no circulatory troubles were observed even in three cases of ligature of the popliteal vein From a consideration of these twenty-three cases of ligature of the vessels, Barbarin and Lerat drew the following conclusions 1 Lesions of the vessels are more frequent than they appear 2 They exist sometimes in the most unsuspected places 3 They are benefited almost more than any other war wound by the earliest possible intervention With regard to the technic of these operations one has to distinguish between the cases in which the wound is in the usual line for exposing the vessel from those, much more numerous, in which it is situated elsewhere In the former case it is necessary only to open up the wound and proceed in the classical manner to find the artery in the vein In the other case, it is better not to yield to the temptation to seek the vessel in the wound because one will only be hindered by the muscles which are infiltrated with blood It is better after having opened up the wound to cut down on the vessels in the classical position In this case one has the choice of suturing or not suturing this operative wound It has been the usual practice to put in a few stitches and to place a package of agar with a tube to permit of dakinization Dakin's fluid irrigates the wound and flows out by the proper drain with the result that cicatrization is rapidly obtained

CONDEMNATION OF SOLDIER FOR REFUSAL OF TREATMENT

The Council of War of the fifth corps d'armee, sitting at Orleans, has condemned to three months' imprisonment a soldier who refused to allow mercurial injections on himself under the pretext that these injections caused pain and other unpleasant consequences The lieutenant who conducted the prosecution submitted that the accused had no motive to refuse a recognized treatment other than that of wishing to avoid a return to the front, and that in refusing treatment he caused himself to be a danger for others

WOUNDS OF THE EYEBALL AND EYELID

This subject is being discussed at the Societe d'ophthalmologie de Paris, and as the result it is made clear that wounds of the eyeball are serious and that the diagnosis in such wounds in wartime is graver than in times of peace The reason, of course, is in the nature of the penetrating body Foreign bodies are not always magnetic Besides pieces of cast iron or steel, one frequently comes across fragments of stone, lead and copper (in proportion to ⅔) which are not susceptible of being removed by the electromagnet When a wound of the eyeball presents itself, one should do all one can to save the organ, because even if the visual function is definitely destroyed, it may be possible to fit a movable artificial eye Enucleation is far too often practiced without sufficient consideration The object is to avoid sympathetic ophthalmia, but this complication is comparatively rare and in any case does not manifest itself till the third or fourth week Every surgeon who is not an oculist, when in the presence of a wound of the eye, should limit himself to (1) disinfecting the eyelids, the eyebrows and the cheek with weakly iodized alcohol, avoiding contact with the conjunctiva and the eye, (2) washing the eyeball and the conjunctival sac with warm physiologic salt solution, and (3) placing an occlusive dressing and sending the wounded man to an ophthalmic surgeon, (4) not in any circumstances, should he practice an enucleation As regards wounds of the eyelids and neighboring regions, there are two considerations early operation and later plastic operation It is characteristic of war wounds involving eyelids that they are almost invariably accompanied by destruction of the eyeball and by lesions of the facial skeleton They are sometimes very large The following conduct is recommended in order to reduce the amount of disfiguration After disinfection of the wound and removal of fragments, it is not good practice to open it up and drain it On the contrary, it is far better to bring the integuments together, and this is possible without interfering with the drainage If such wounds are left to granulate spontaneously, the future plastic operations will be compromised and many of the patients will remain permanently disfigured One should, therefore, be careful to bring the fragments of torn eyelids together, and to respect their surface and that of the conjunctiva, drainage by tubes or wicks is usually quite sufficient If necessary, one can practice a counteropening Such wounded should evidently not be kept in the ambulance, but should be sent as soon as possible to the nearest ophthalmic center Certain of the reconstitutions (plastic operations) can be practiced a few weeks after the infection of the wound, but the more important esthetic interventions are a work of patience Granted this patience on the part of the surgeon and the wounded, much can be done for the disfigured by means of numerous operations This kind of work, however is more suited for the services in the interior of the country, and *it will be especially a work of peace time*

Personal

Dr Charles Paul, medicolegal expert to the tribunal of the Department of the Seine and at present head of the medicolegal service of the army, has just been mentioned in general orders in the following terms

> A physician as remarkable for his learning as for his courage renders distinguished services to the army and to the civil population by his dangerous experiments on asphyxiating gases By his tireless activity his perilous missions in the firing line hastening to any spot where these gases cause danger he has given proof of the greatest courage and of complete contempt for danger He has been injured by the action of these gases

Measures Against Rabies

In a previous letter I noted the diminution of rabies during the period 1910-1914 (The Journal, July 29, 1916, p 369) During the last few months there has been a manifest increase in this disease In Paris and its neighborhood, a district which has seemed during several years definitely freed from this plague, seventeen cases have been reported from March to July, inclusive This grave situation seems due to the evacuation of houses in the military zone which has left numerous dogs without domicile The prefect of police has therefore published an order concerning dogs in the capital A similar step has also been taken for the Department of the Seine Henceforward every dog must wear a collar bearing the name of his owner, and must be either led or muzzled Dogs found on the highway without such a collar, whether muzzled or not and any dog whose owner is not known in the neighborhood, will be captured and killed Dogs and cats bitten by a suspected animal will be immediately killed Suspected animals will be quarantined for observation

Sale of Poisons

The new law of July 12 1916, concerning the importation of trade in and the storage of poisonous substances, cocain opium, morphin and other narcotics has just been applied for the first time by the Court of First Instance of Paris A former law of 1845 imposed insignificant penalties—from six days to two months in prison and from 100 to 3 000 francs ($19 30 to $579) fine Moreover, this law punished only for the sale, the purchase and the use of poisonous substances Under the new law the penalty has been considerably increased It varies from three months to two years in prison and from 1 000 to 10 000 francs ($193 to $1,930) fine Moreover, the simple possession of poisons is punishable in the same way as the selling thereof In the case mentioned the accused, who derived a considerable income from the sale of cocain was condemned to one year's prison and 1,000 francs ($193) fine

LONDON LETTER

London, Oct 2, 1916

Sir Lauder Brunton

Sir Lauder Brunton, Bart, M D, C M, D Sc (Edin), M D R U I (Hon) LL D (Edin and Aberd [Hon]), F R C P (Lond) F R S, consulting physician to St Bartholomew's Hospital, died at his residence in London in his seventy-third year For many years he was easily the foremost authority on pharmacology and therapeutics in this country A Scotsman, he was born in Roxburghshire, and was educated at Edinburgh, where he graduated M B, in 1866 B Sc., in 1867, M D in 1868 and D Sc in 1870 having in the meanwhile worked at Paris, Vienna, Berlin and Leipzig in the laboratories of the greatest physiologists of the day Settling in London, he became a member of the Royal College of Physicians in 1870 and a fellow in 1876 and was appointed assistant physician to St Bartholomew's Hospital, with which he had ever since been connected as physician and lecturer His earliest important work was a thesis on digitalis in which he conducted most of the experiments on himself and showed that while small doses had little or no action, marked diuresis occurred when the drug was pushed so as to produce symptoms of poisoning He found, also, that while the diuresis continued, the absolute quantity of solids excreted daily in the urine was increased, although their proportion to the urinary water was diminished The great aim of his life was to convert therapeutics from an art into a science As his friend and pupil Dr Mitchell Bruce says, his "Experimental Investigation of the Actions of Medicine (1875) was the first systematic textbook on experimental pharmacology, and his "Pharmacology Therapeutics and Materia Medica" which appeared in 1885, was the first complete treatise on the subject from the standpoint of physiology, not from that of drugs He formulated completely for the first time in his thesis on digitalis in 1866 the action of this drug on the heart and vessels He introduced in 1867 a new class of remedies—vasodilators—into medicine, in using amyl nitrite as a remedy in disease because its physiologic action was to act in an opposite manner to the pathologic condition which he had discovered in the disease—angina pectoris—namely rise in arterial pressure Magendie did the same in regard to strychnin in paralysis, but he recommended it to combat a symptom, Brunton recommended the drug to combat a pathologic condition He was the first to use scientific opotherapy by administering raw meat in diabetes in order to supply a glycolytic ferment In his work with A Macfadyen, he found that bacilli excreted an enzyme by which they attack and digest the soil in which they grow In this observation he believed that they were anticipated by Salmon They were, moreover, the first to discover that bacilli have the power of adapting the enzyme they secrete to the soil on which they grow In 1889 he delivered the Croonian lectures of the Royal College of Physicians of London on the Relationship between Chemical Structure and Physiological Action," and was thus a pioneer in a subject which has become most important in the present day Other subjects in which he made his mark were the therapeutics of the circulation and of digestion, the action of snake venom, and the administration of chloroform He was a lucid writer and the manner in which he applied the discoveries of the laboratory to the problems of the clinic fascinated his generation Many of the present day professors of materia medica and pharmacology are his pupils Perhaps his most important practical work was the introduction into medicine of the drugs which lower blood tension The story of his well known textbook on pharmacology was characteristic of the man More than fifteen years before it appeared he had a work on materia medica ready for the press but he asked the printer to wait a little so that he might make some improvement and remove some redundancies When he went over the manuscript again he found many unsatisfactory statements and uncertainties which he thought he could remove by a few experiments but as he went on the labor grew, and not until the end of the period mentioned was he able to produce the book which was the pioneer work of the kind Many editions appeared both in London and America as well as translations into French, Italian, Spanish and German This was the first book in which pharmacology was considered as a scientific study of the physiologic action of drugs, and it exercised a most important influence throughout the world

A Physician Who "Conscientiously" Objects to Attend to the Wounded

In this country cranks of all sorts flourish, and extreme regard for the rights of the individual allows a latitude unknown on the European continent, whether among our friends or foes There the "conscientious objector" to military service is never heard of because the right to object does not exist Here he is drafted into the ambulance corps or given other military work which does not involve the taking of life But even this is not sufficient for some objectors The extraordinary and so far unique case of a physician who objected even to attend to the wounded recently came before the Argyllshire Appeal Tribunal Dr J C MacCallum, tuberculosis officer of the county, appealed for exemption as a conscientious objector The local tribunal had decided that he had not made out a case for exemption, and suggested that there was nothing to prevent him showing a true Christian spirit by placing his medical skill at the disposal of his wounded fellow countrymen In his appeal, Dr MacCallum said that his father was a parish minister who had preached consistently the essential sinfulness of war, and the family had for many years been conspicuously antimilitarist Current events had done nothing to shake his ingrained repugnance to war On the contrary, the spectacle of the neverending contest which was drenching Europe in blood had but served to steel his resolution against what was shown clearly to be a crime against humanity Further, he was unable to realize that there was any logical difference in morality between combatant and noncombatant service The appeal was dismissed

Fatigue from the Economic Standpoint

At the meeting of the British Association for the Advancement of Science, the Section of Economic Science had an interesting discussion on the second report of the committee which is inquiring into the question of fatigue from the economic standpoint The report included a memorandum from Dr Gwynne Maitland, who during the war in Serbia had special opportunities for observation on accumulated fatigue in warfare Experience of work in the field led him to useful conclusions which had resulted in some measure of reform in the army Long continued trench strain gave rise to cases of breakdown in which the patients recovered after a period of rest, but were left with a shorter period of utility on return to the trenches, and on breaking down again were frequently discharged as of no further use Not only was the period of activity shortened, but also the quality of the work deteriorated as was shown by inaccurate firing and an inability to time hand-grenade fuses Under the conditions which existed, it could not be hoped to obtain an ideal working day for each military unit, but with the present greater ability to supply reinforcements, it could be hoped to diminish the strain as well as more frequently to replace the actual fighting units It became a matter of the greatest urgency that with this ability and with the growing delicacy of perception in the anticipation of the breaking point a greater discretion might be employed to prevent it

The report also dealt with fatigue as a cause of accidents and the applicability of psychology to problems of industrial fatigue Dr G B Hunter, chairman of a large manufacturing firm, thought the matter of industrial fatigue had been greatly exaggerated His experience was that so far from there being more accidents when hours were longest, most accidents occurred on Saturday when the working day was shortest The average working hours in shipyards were thirty-seven weekly in ordinary times, and there was not much fatigue about that They did, however, find fatigue when a man worked hard and drank whisky with it Those who did not take drink worked the longest hours and suffered least from fatigue He believed the average mother of a family grew more tired in a day than any shipyard worker

Sir Thomas Oliver said that industrial fatigue was entirely the outcome of recent conditions of labor All reports showed that it existed, and in his opinion it played an important part in the number of accidents which occurred The hours of munition workers, he suggested were far too long It was also a mistake that girls should be working in the factory during the night Women had done admirably but we should see that the conditions under which they worked did not injure their health

The Compulsory Notification of Venereal Disease

[illegible] Sydenham, president, and Sir Thomas Barlow and [illegible]hop of Southwark, vice presidents of the National [illegible]ncil for Combating Venereal Diseases have written to [illegible]e *Times* on this important subject as follows 'As some misunderstanding seems to have arisen in regard to the attitude of the National Council for Combating Venereal Diseases toward the question of compulsory notification we desire to point out that we are determined to adhere strictly to the recommendations of the royal commission That body carefully considered this question and arrived at the conclusion that notification at the present time was impracticable, and might be detrimental to the operation of the measures it advocated A great mass of evidence was taken and the balance was strongly opposed to compulsory methods of this nature The commissioners however recognized that, when public opinion became more enlightened and adequate facilities for treatment had been provided 'the question of notifications should then be further considered' They added that when these conditions have been fulfilled it is 'possible that notification in some form will be demanded' We are convinced that this view is sound and the national council will, therefore lend no support to any proposals having for their object the establishment of compulsory notification—proposals which would necessarily lead to controversy at a time when unanimity of effort is essential"

Marriages

Charles Lounsbury Ruggles, M D Wellsberg W Va, to Miss Phoebe Otto of Cleveland, October 10

Russell Firth Sheldon, M D, Boston to Miss Lura Emma Hewey of Brookline, Mass, October 9

William H MacDonald, M D, Lake Geneva, Wis, to Miss Alma E Hall of Chicago, October 18

Adelbert Stephen Dederick, M D, Brooklyn, to Mrs Daisy M Hunter of Summit, N J, September 27

John Irwin Gaston, M D, Madill, Okla, to Mrs Eula B Mullins of Oklahoma City, August 14

Byam Hollings, M D, Waverley Mass, to Miss Alice Walker of Norwood, Mass, October 2

Thomas John Sullivan, Jr M D, to Miss Gertrude Scotten both of Chicago October 4

Gordon Hurst Yeo, M D to Miss Ernestine Bishop both of Big Rapids, Mich October 2

Paul Hume Crawford M D to Miss Helen McKee both of Oklahoma City, September 7

Deaths

William Preston Miller, M D Hagerstown, Md, University of Pennsylvania, Philadelphia, 1894, Baltimore Medical College, 1892, aged 46, a Fellow of the American Medical Association, and formerly president of the Washington County (Md) Medical Society, local surgeon of the Baltimore and Ohio System, formerly a member of the council of the Medical and Chirurgical Faculty of Maryland, lecturer on pathology in Baltimore Medical College in 1897 and 1898 died at his home October 6, from double pneumonia

James W McMeekin, M D., Saginaw, Mich, McGill University, Montreal, Que, 1885, aged 57, a Fellow of the American Medical Association, professor of surgery and clinical surgery in the Michigan College of Medicine and Surgery Detroit, gynecologist to the Women's Hospital, Saginaw and formerly surgeon to the Bliss Deaconess Hospital, a specialist in radiology and a fellow of the American College of Surgeons, died at his home, October 3, from angina pectoris

Josiah L Wilcox, M D, Springfield Ill, Washington University Medical School St Louis, 1860, Illinois Army Board 1863, aged 80 surgeon of the Eleventh Illinois Infantry, U S V throughout the Civil War, a member of the legislature in 1874 and collector of internal revenue in the central Illinois district for several years city physician of Springfield died at the home of his daughter in Smithfield, Ky October 4

Saxe Johansen Froshaug, M D, Benson, Minn, Keokuk (Iowa) Medical College, 1895, aged 49, formerly local surgeon of the Great Northern Railroad at Hills Minn, chairman of the board of health of Rock County and county coroner a member of the Minnesota State Medical Association died at his home, October 1, from acute peritonitis due to a perforating ulcer of the duodenum

Matthew Woods, M D, Philadelphia, University of Pennsylvania Philadelphia 1873, aged 67, a Fellow of the American Medical Association and a member of the Philadelphia Psychiatric Society, a veteran of the Civil War, a specialist in the treatment of epilepsy and author of several books and monographs on this subject, died in Philadelphia October 13 after a surgical operation

Henry Goodsir Mackid, M D, Calgary, Alta, University of Toronto 1879, L R C P Edinburgh L R C S Edinburgh, L R F P & S Glasgow, 1888, aged 58, president of the Dominion Medical Association in 1912 coroner of Alberta and chief surgeon of the Canadian Pacific Railroad a fellow of the American College of Surgeons, died at his home, August 16 from diabetes

Elijah Iles Kerlin, M D, Chicago, University of Pennsylvania Philadelphia 1886, aged 62, a Fellow of the American Medical Association and for many years a member of the staff of St Joseph's Hospital and the Lincoln Park Sanitarium for Sick Babies who had suffered several years from bronchial asthma, died at his home, October 11, from acute dilatation of the heart

Arthur LeRoy Hunt, M D, Washington D C, George Washington University Washington D C, 1905, aged 39, a Fellow of the American Medical Association and corresponding secretary of the Medical Society of the District of Columbia medical inspector of the health department of the District of Columbia, died in Washington, October 7, from anterior poliomyelitis

Herbert Marshal Howe, M D, Bristol, R I, University of Pennsylvania, Philadelphia, 1865, aged 72, formerly a practitioner and coal operator at Philadelphia, a director of the Tradesmen's National Bank Philadelphia and many other industrial corporations, also a director of the Pennsylvania Academy of the Fine Arts, died at his home, October 1, from heart disease

George Carleton Dominick, M D, New York, New York Homeopathic Medical College New York, 1904, aged 40 attending physician to the Metropolitan and Volunteer hospitals New York, while returning from a two weeks' trip on the United Fruit Company's steamer *Pastores*, died from tuberculosis, October 2, as the steamer was entering New York Harbor

John Herbert Mease, M D, Canton N C, Vanderbilt University Nashville Tenn 1893, aged 44, formerly a member of the Medical Society of the State of North Carolina a member of the Medical Corps of the North Carolina

National Guard and attached to the Ambulance Company, died in a hospital in Goldsboro, N C, September 24

Hawley Nathan Barney, M D, Richmond, Calif , University and Bellevue Hospital Medical College, New York, 1900, aged 39, a Fellow of the American Medical Association, formerly president of the Contra Costa County Medical Society and health officer of Point Richmond, died in the Napa Hospital, October 7, from paresis

David Magie, M D, Princeton, N J , College of Physicians and Surgeons in the City of New York, 1863, aged 75, a member of the Medical Society of the State of New York, for many years a practitioner of New York and attending physician in the heart and lung department of the New York Hospital, died at his home, October 3

Grace Agnes Murphy Curry, M D, New York, Women's Medical College of the New York Infirmary for Women and Children, 1897, aged 47, formerly a Fellow of the American Medical Association, and assistant pathologist at the Troy (N Y) Hospital, died suddenly on a Hudson River steamer, October 3, while en route to New York

Louis Corwin Millspaugh, M D, New York, New York University, New York, 1884, aged 54, formerly a member of the Medical Society of the State of New York, assistant in the Nose and Throat Clinic of the New York Post-Graduate School, was drowned while swimming in the Mississippi River at Red Wing, Minn recently

Wellington G Steele, M D, Mongaup Valley, N Y , Albany (N Y) Medical College, 1886, aged 61, formerly a member of the Medical Society of the State of New York, a specialist on diseases of the nose and throat, died at his home, September 10, from acute laryngitis

John Loper Smith, M D, Chattaroy, Wash , Jefferson Medical College, 1890, aged 71, a veteran of the Civil War, surgeon-general of the G A R in 1910-1911 and for many years in charge of the Great Northern Railway Hospital in Chattaroy, died at his home, September 30

Josiah Hornblower, M D, Jersey City, N J , New York University, New York, 1860, aged 80, a member of the New Jersey Legislature from 1870 to 1872 and for three terms a member of the Jersey City Board of Education, died at his home, October 5

Tobias John Green, M D, Mexico, N Y , Geneva (N Y) Medical College, 1845, aged 98, formerly a member of the Medical Society of the State of New York, said to have been the oldest practitioner in the state, died suddenly at his home, October 4

Franklin Duane Babcock, M D, Morrisville N Y , Bellevue Hospital Medical College, 1889, aged 68, for twenty-five years a member of the board of education of Morrisville, and for many years its president, died at his home, September 27

John W Hosier, M D, Spring Valley, Ill , Medical College of Ohio, Cincinnati 1873, aged 69, for forty years a practitioner and druggist of Bureau County, Ill , died in St Margaret's Hospital, Spring Valley, October 2, from diabetes

Robert Williams Crawford, M D, Strasburg, Va , University of Maryland, Baltimore, 1906, aged 36, chief surgeon of the Atlantic Coast Line Railway, with headquarters at Wilmington, N C , died at his home, September 21

Elizabeth C Secord, M D, Farmerston, N B , College of Physicians and Surgeons Keokuk, Iowa, 1881, Northwestern University Women s Medical School Chicago, 1882, aged 74, died at her home, July 4 from tuberculosis

Horace W Coombs, M D, Cave City, Ky , Eclectic Medical Institute, Cincinnati, 1870, aged 70 formerly a member of the Kentucky State Medical Society, died at his home, August 9, from carcinoma of the rectum

Cardinal T Wolsey, M D, Buffalo, N Y Howard University, Washington, D C, 1885, aged 67 for twenty years medical examiner for the U S Marine Recruiting Office in Buffalo, died at his home, September 27

Joachim B Weintraub, M D, Chicago, University of Vermont, Burlington, 1893, aged 46, who was shot by a patient in his office October 9, died the next day in St Luke's Hospital from his injuries

Thomas M McVay, Summerfield, Ohio (license, years of practice, 1896), aged 74, a practitioner and druggist since 1863, formerly treasurer of Noble County, Ohio, died at his home, September 27

Francis J Boutin, M D, Coyle, Okla , Hahnemann Medical College Chicago, 1883, aged 61, a member of the Oklahoma State Medical Association, died at his home, August 26 from heart disease

Herman Bening, M D, Cibolo, Texas, Eclectic Medical College of the City of New York, 1879, aged 64, a member of the State Medical Association of Texas, died at his home, September 13

L R Metzgar, M D, Pasadena, Calif , Long Island College Hospital, Brooklyn, 1866, aged 80, formerly of Wilkinsburg, Pa , a veteran of the Civil War, died at his home, October 4

Roy Herbert Nichol, M D, New York, Rush Medical College, 1911, aged 34, a member of the staff of Kings County Hospital, Brooklyn, died in New York, October 7, from pneumonia

Timothy Lowthian, M D, Unionville, Mich , University of Buffalo, N Y, 1880, aged 68, a Fellow of the American Medical Association, was found dead in his office, September 30

Louis L Lloyd, M D, Baltimore, Baltimore Medical College, 1904, aged 46, died in the Maryland General Hospital, Baltimore, September 29, from disease of the intestine

Lewis Hamilton Smith, M D, Toledo, Ohio, Medical College of Ohio, Cincinnati 1893, aged 46, was found dead at his home in Toledo, October 2, from heart disease

George Price, M D, Altoona, Pa , University of Pennsylvania, Philadelphia 1878, aged 68, a veteran of the Civil War, died at Edgegood, Pittsburgh, September 24

Samah Wilford Lewin, M D, Sanford, Fla , Flint Medical College, New Orleans, 1895, aged 44, a colored practitioner, died in Sanford, September 16, from appendicitis

Claire Adele Verge Taylor, M D, Peru, Ind , University of Paris, France, 1868, aged 69, a practitioner of Peru for thirty years, died at her home, September 19

Edward Severance, M D, Tacoma, Wash , University of Oregon, Portland, 1888, aged 61, died in St Joseph's Hospital, Tacoma, September 26, from nephritis

John Milton Tobias, M D, Mitchell, Neb , Eclectic Medical Institute, Cincinnati, 1872, aged 76, a veteran of the Civil War, died at his home, September 29

Nathan A C Mackie, M D, Golinda, Texas, University of Tennessee, Nashville, 1881, aged 64, died at his home, September 26, from cerebral hemorrhage

John William McNamara, M D, Denver, Medical College of Ohio, Cincinnati, 1901, aged 39, died at his home, September 19, from tuberculous meningitis

Harry Carter, M D, New York, University of Vermont, Burlington, 1903, aged 36, died in the Hartford (Conn) Hospital, July 4, from tuberculosis

Russell Bingham, M D, Fitchburg Mass , Hahnemann Medical College, Chicago, 1890, aged 65, died at his home, September 23, from acute gastritis

Byron L Craft, M D, Newark, N J , University of Buffalo, N Y, 1893, aged 48, died suddenly in East Elmira, N Y, September 17, from heart disease

Benjamin Fagnant, M D, Springfield, Mass , Victoria University, Coburg, Ont, 1871, aged 73, died at his home, August 19, from angina pectoris

Charles Fee Kratzer, M D, Savannah, Iowa, College of Physicians and Surgeons, Keokuk, Iowa, 1885, aged 55, died at his home, September 17

William S Ellsberry, M D, Bethel Ohio, Medical College of Ohio, Cincinnati, 1873, aged 64, died suddenly in his office in Bethel, September 9

William Clancy Peters, M D, Harrisburg, Pa , Hahnemann Medical College, Philadelphia, 1881, aged 57, died at his home, September 20

Oliver L Hudson, Princeton, Ind (license, Indiana, 1897), aged 86, for sixty-five years a practitioner, died at his home September 22

John D Mercur, M D, Towanda, Pa , Jefferson Medical College, 1878, aged 63, died at his home, September 21, from acute gastritis

Herschel A Russ, M D, Hillsboro, Ohio, Medical College of Ohio, Cincinnati, 1890, aged 47, died at his home, September 23

Ralph Kenneth Mitchell, M D, Milwaukee, Wis , Rush Medical College, 1913, aged 27, died at his home, September 24

Ezra M Carr, Pipestone Minn (license, Minnesota, act of 1887), aged 78, died at his home, September 15

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

NUXATED IRON

It Contains but Little Iron and Practically No "Nux"

Newspapers whose advertising ethics are still in the formative stage have, for some months past, been singing—at so much a song—the praises of "Nuxated Iron" The public has been told that this nostrum is what makes Ty Cobb, "the greatest baseball batter of all time," a "winner" and is what helped Jess Willard "to whip Frank Moran" besides being the "untold secret" of Willard's "great triumph over Jack Johnson"

Nuxated Iron" is put on the market by the Dae Health Laboratories of Detroit It is not a patent medicine or secret remedy"—if one is to believe the advertisements On the trade package we read

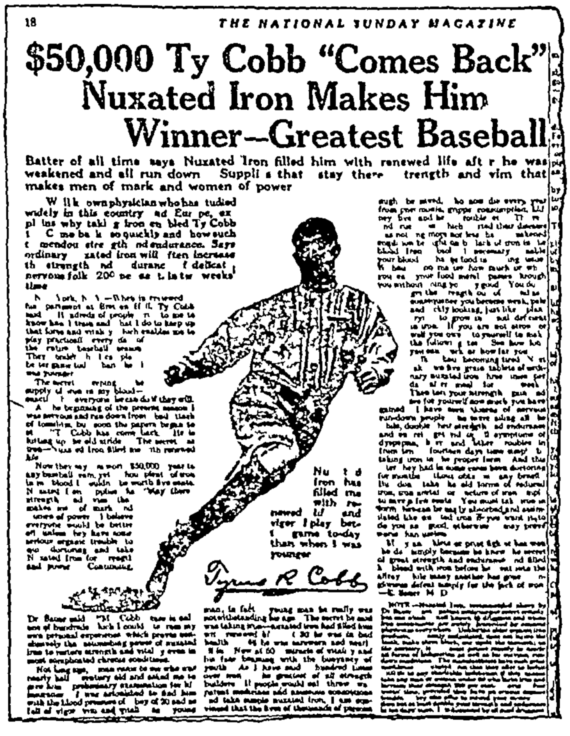
> Formula —The valuable blood, nerve force and tissue building properties of this preparation are due to organic iron in the form of ferrum peptonate in combination with nux vomica phosphoglycerate de chaux and other valuable ingredients '

This, apparently, is the company's idea of nonsecrecy The Dae Health Laboratories also say that they are willing to send to any physician 'full information in regard to its ingredients and methods of preparing" So far as we know no physician has been sent "full information" One physician who did write for this information received in return a form letter addressing him as 'Mr Druggist," and reading in part as follows

> That you may be conversant with the nature of the product which we are asking you to sell we wish to give you the following information which you in turn may give to such of your employees as you may see fit
>
> We respectfully ask that this information be regarded as confidential although there is no harm in your telling your customers that you are familiar with the product and that you believe the ingredients to be beneficial etc
>
> The principle [sic!] ingredients in Nuxated Iron are
> Organic Iron in the form of Iron Peptonate
> *Nux Vomica
> Glycero Phosphate of Calcium
> *To the above is added a little magnesia, ginger, a laxative and certain other minor ingredients *

As an example of "full information," regarding the "ingredients" and "methods of preparing," this letter left much to be desired, so much in fact that The Journal felt that it owed it to the public to find out just how much iron and nux vomica there were in "Nuxated Iron" Packages of the nostrum purchased on the open market were subjected to analysis both in the Chemical Laboratory of the American Medical Association and elsewhere Qualitative tests indicated the presence of iron calcium magnesium, carbonate, glycerophosphate and small amounts of potassium and chlorid and the presence of cascara Quantitative examinations were made and so far as the essential ingredients—nux vomica and iron—of the nostrum are concerned, gave the following results

Total nux vomica alkaloids per tablet	1/500 grain
Iron (Fe) per tablet	1/25 grain



18 THE NATIONAL SUNDAY MAGAZINE

$50,000 Ty Cobb "Comes Back" Nuxated Iron Makes Him Winner—Greatest Baseball

Batter of all time says Nuxated Iron filled him with renewed life after he was weakened and all run down Supplies that stay there strength and vim that makes men of mark and women of power

Nuxated Iron has filled me with renewed life and vigor I play better game to-day than when I was younger

Tyrus R Cobb

Greatly reduced photographic reproduction of a typical Nuxated Iron newspaper advertisement

According to these analyses there is only one-twenty-fifth of a grain of iron in each "Nuxated Iron" tablet, while the amount of nux vomica, as expressed in terms of its potent alkaloids, is practically negligible If a person wants to take iron on his own responsibility—and this cannot be recommended—it is possible to get this drug in a staple form in the well known Blaud's Pills In a dollar bottle of "Nuxated Iron" the purchaser gets, according to our analysis, less than 2½ grains of iron, in 100 Blaud's Pills, which can be purchased at any drugstore for from 50 to 75 cents, there are 48 grains of iron The claim that "Nuxated Iron" possesses great advantages over other forms of iron is the sheerest advertising buncombe

The exploiters of "Nuxated Iron" would have the public believe that iron is the one thing that most ailing people need Nothing could be much further from the truth Iron is a useful and valuable drug in selected cases, but the conditions for which it may be useful are limited The indiscriminate use of iron is illogical and unwise Few drugs have been more abused and taken with less discrimination than is iron

DR SAUER—STOOLPIGEON

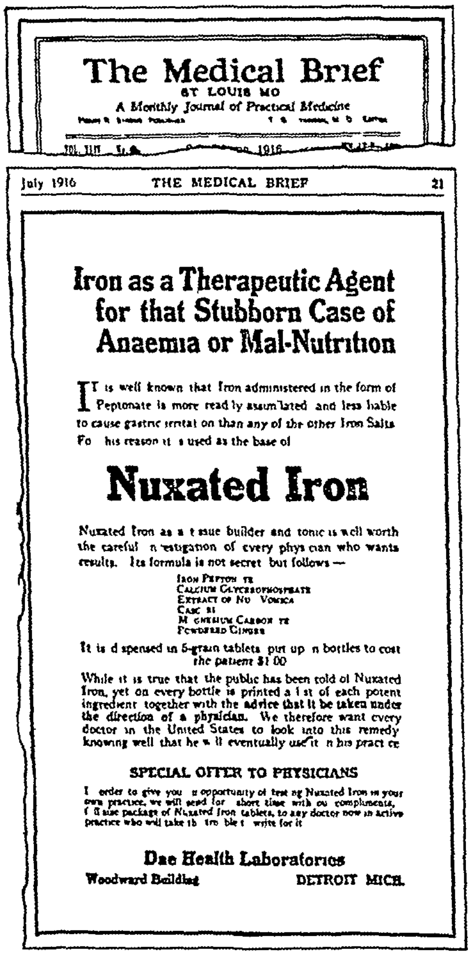
In practically all of the newspaper advertisements of "Nuxated Iron" quotations are given from the alleged statements of one 'Dr E Sauer" characterized by the nostrum exploiters as a New York "specialist" and as "a well known specialist who has studied widely both in this country and in Europe" Dr Sauer is *not* well known either as a specialist or anything else save as he has attained notoriety in connection with the "Nuxated Iron' advertisements and through his own advertising in New Haven (Conn) newspapers, in which he used to cry his wares From our records it appears that if he ever practiced in New York he did so in violation of the law, for he is not licensed in that state Emil Sauer was graduated in 1903 by the Jefferson Medical College of Philadelphia, he is licensed to practice in Massachusetts and Connecticut So far as our records show, and they are remarkably complete, Sauer has never been elected to his local medical society in any of the many localities in which he has practiced Possibly he never stayed long enough in one place Since graduating Sauer seems to have lived in Berlin, Vienna, Worcester, Mass Boston, Hartford, Conn, Springfield, Mass and New Haven, Conn In how many more places he has lived we do not know, as our attempts to locate him since 1914 have failed, this too, in spite of the fact that the 'Nuxated Iron" concern insists that he is well known"

NOT A PATENTED MEDICINE BUT A "PATENT MEDICINE'

The claim that 'Nuxated Iron" "is not a patent medicine' while technically correct is essentially just as false as many of the other statements made in behalf of the nostrum A true "patent medicine" is one whose composition or method of making, or both, has been patented It is not secret because its composition must appear in the patent specifications, moreover it must have some claims to originality or a patent would not be granted What are colloquially called patent medicines are really proprietary medicines, products usually secret in composition, that have been given a trade marked name In the popular meaning of the words, "Nuxated

Iron" is just as much a "patent medicine" as is "Peruna," "Lydia Pinkham's" or "Pierce's Favorite Prescription" "Nuxated Iron" is essentially secret in composition and, while the public is led to believe that the preparation consists chiefly of nux vomica and iron, analyses indicate that it contains much less than an ordinary dose of iron and a negligible amount of nux vomica It is sold under claims that are both directly and inferentially false and misleading, not only in regard to its composition, but also as to its alleged therapeutic effects As for the claim that "Nuxated Iron" is the responsible agent for Jess Willard's victory over Jack Johnson or Ty Cobb's "come back," it would be just as reasonable and true to give this nostrum credit for the success of Samson s historical escapade with the jaw-bone of an ass

So much for the consideration of "Nuxated Iron" from the standpoint of the public Until the people realize the extent to which they are defrauded and injured by "patent medicine" fakers generally, it is not likely that they will demand a law requiring the manufacturers of "patent medicines" to declare the kind and amounts of active drugs in their preparations In the meantime, if the public wishes to drug itself with compounds of unknown composition and strength, that is its privilege But the 'Nuxated Iron' humbug has another angle to it, one that directly affects the medical profession It would seem that there is no nostrum too quackish but certain publications calling themselves medical journals will welcome it into their advertising pages, that there are no "patent medicines" too fakish but certain men who, unfortunately for the public, have the legal right to practice medicine, will prescribe it



The Medical Brief
St Louis Mo
A Monthly Journal of Practical Medicine

July 1916 THE MEDICAL BRIEF 21

Iron as a Therapeutic Agent for that Stubborn Case of Anaemia or Mal-Nutrition

It is well known that Iron administered in the form of Peptonate is more readily assimilated and less liable to cause gastric irritation than any of the other Iron Salts For this reason it is used as the base of

Nuxated Iron

Nuxated Iron as a tissue builder and tonic is well worth the careful investigation of every physician who wants results. Its formula is not secret but follows —

Iron Peptonate
Calcium Glycerophosphate
Extract of Nux Vomica
Casc
Magnesium Carbonate
Powdered Ginger

It is dispensed in 5-grain tablets put up in bottles to cost the patient $1 00

While it is true that the public has been told of Nuxated Iron, yet on every bottle is printed a list of each potent ingredient together with the advice that it be taken under the direction of a physician. We therefore want every doctor in the United States to look into this remedy knowing well that he will eventually use it in his practice

SPECIAL OFFER TO PHYSICIANS

In order to give you an opportunity of testing Nuxated Iron in your own practice, we will send for a short time with our compliments, a full size package of Nuxated Iron tablets, to any doctor now in active practice who will take the trouble to write for it

Dae Health Laboratories
Woodward Building DETROIT MICH.

Full page advertisement (greatly reduced) of 'Nuxated Iron' in the *Medical Brief* The *Medical Brief* poses as a medical journal most physicians know better

"MEDICAL BRIEF"—NOSTRUM EXPLOITER

The *Medical Brief* has for some months been carrying full page advertisements of "Nuxated Iron" As our readers may remember, the *Medical Brief* has for its editor Thomas G Atkinson, the "medical expert" for the Wine of Cardui concern in its recent suit against the American Medical Association It was Atkinson who swore he was an "L R C P (Lond)" He also swore that he received his license in 1892 but had since lost it, this in spite of the fact that The Journal has in its possession a letter from the Royal College of Physicians of London denying that Atkinson ever received such a license

The publisher of the *Medical Brief* is Henry R Strong, who also publishes the *National Druggist*, a journal which recently accused the United States judge who sat in the Wine of Cardui case of being partial to the American Medical Association and prejudiced against the Chattanooga Medicine Company The *National Druggist* has long been a mouthpiece for the "patent medicine" interests and can always be counted on to devote a substantial part of its editorial columns each month to blackguarding doctors in general and the American Medical Association in particular

Of course the intelligent physician views the *Medical Brief* with the same contempt that the decent druggist bestows on the *National Druggist* But the layman is not and cannot be so discriminating, to him a "medical journal" is a medical journal Then, too, it is doubtless a fact that, even if the bulk of the *Medical Brief* circulation is of the "sample copy" variety, there are some physicians who actually subscribe for and support it It is true that the *Medical Brief* carries advertisements of "Duffy's Malt Whiskey," "Eckman's Alterative," 'Micajah s Wafers," 'Sal Hepatica" and several other "patent medicines" but to none of these is quite as much space given as to "Nuxated Iron"

It is not surprising, while such conditions as these obtain, that the American Medical Association failed to receive technical justification—as it did receive moral justification—in its recent lawsuit with the nostrum interests American medicine of today is cursed with two evils, venality and ignorance The former flourishes among those who, for their own gain, exploit those members of the profession who are afflicted with the latter The time will come when it will be hard to realize the disgraceful part that some portion of the medical profession has played in furthering the nostrum evil Education and an awakened professional conscience will relegate such episodes as the "Nuxated Iron" advertisements in the *Medical Brief* to the limbo of a forgotten and dishonorable past

Correspondence

Postgraduate Course for Resident Staff at Harper Hospital

To the Editor —Much discussion at present is centered on the requirement of a fifth year for medical students, the year to be a postgraduate year in hospital work From all indications this plan will soon be adopted generally, and hospitals should be prepared for it

Aside from the question of a fifth or postgraduate year, the question of intern instruction is important The intern is using one, two or three years of the best part of his life, after having spent his allotted time in school, trying to prepare himself better to serve the public, and during this period of hospital work he is able to grasp whatever is given him because his time can be so arranged that he can attend a course of instruction His mind is still receptive, he has not the care of a practice on his hands, and it is the duty of the hospital he is serving to give him all it possibly can for the time which he spends A hospital is of necessity a teaching institution, has student nurses, and really student or graduate student physicians to maintain its working efficiency The greater the teaching plan, the greater the efficiency and the more attractive the service

The intern, of course, has his regular ward work and his special work which he elects to do as well as that required

Furthermore, he receives individual instruction from the visiting physician in the particular service in which his internship takes him He does not get a definite correlated course of instruction however, with a definite plan to it, but rather a hit and miss service as cases happen to come This, I believe, is true in all institutions and is certainly true in most It has been felt not only by this hospital, but also by many others, that the interns and resident staff should receive more instruction than they get from the individual visiting physicians or individual cases Individual case instruction is a necessity and really one of the big reasons for taking a hospital appointment, but with this, a well correlated course of instruction certainly can be made invaluable

With our large service, we must have a large number of interns Taking into consideration the residents assistant residents and interns we have about forty physicians With so large a service we have opportunity to carry out an extra course for interns Accordingly we have established practically a postgraduate course for the benefit of the house staff The medical and surgical courses are arranged separately The course as organized is as follows

The department of pathology and research will give thirty-six lectures or demonstrations to each service The lectures for the medical service will embrace the pathology of the blood, sputum urine kidneys spleen lungs and liver, etc, while the surgical side of the service will be more of a course in surgical pathology, namely new growths bone pathology peritonitis etc

The roentgenologic department will in like manner have two distinct courses one for medical and one devoted more especially to surgical roentgenology The medical work will be devoted to roentgenology of the chest and intestines while the surgical will take up fracture work with of course intestinal and kidney work and general roentgenology of the surgical conditions This course embraces thirty-two lectures each, for medical and surgical service

The remainder of the medical teaching is divided among the specialties and general medicine The dermatologic and neurologic departments have divided one hour a week so that each has sixteen lectures The dermatologic department has elected to show cases by the clinical method and after the clinic the cases are freely discussed These cases are obtained from the hospital ward, from the outpatient department and from the instructor's private practice Thus a wealth of material will be provided

The neurologic department is for the present at least directing its attention more to psychiatric study than to nerve lesions as it feels that psychiatry is not a subject ordinarily well brought to the attention of the undergraduate

The general medical course is planned about as any general medical clinic would be elsewhere, depending on the material at hand and the inclination of the instructor

The surgical side of the course is arranged much the same as the medical The roentgenologic and pathologic side has already been described

The general surgical course has been divided among eight men, each of whom has one month of the course and will consist of lectures and clinics according to the choice of the surgeon

The specialties have been divided into four sections of sixteen lectures or clinics each Proctology and genito-urinary surgery have the first four months, with ophthalmology and allied subjects and gynecology the last four months

The proctologic outline will include malignant diseases of the rectum surgical treatment of the ordinary rectal troubles such as hemorrhoids and fistula, and also instruction in the use of the proctoscope

The genito-urinary course will include more of the simple genito urinary problems such as instruction in catheterization and the treatment of ordinary acute infections of the genito-urinary tract, with final special instruction when possible in cystoscopy

Ophthalmology otology and rhinolaryngology will offer instruction and demonstration as the surgeon thinks best, depending on the material at hand

In gynecology the plan is to give both lectures and demonstrations so that each person may become better acquainted with methods of examination of patients and interpretation of the facts obtained by examination

These lectures and demonstrations will be given over from time to time to free discussion of the material at hand The entire course will cover eight months, one hour each day for each service, five days of the week

The visiting staff has entered into this plan heartily and we feel that its success is assured Certainly from the point of view of the intern it is a distinct advance in training

T K Gruber M D, Detroit
Assistant Superintendent, Harper Hospital

Physicians Wanted for War Service

To the Editor —May I venture to ask that attention be called through The Journal to the shortage of surgeons in the foreign armies I am prepared to guarantee traveling expenses and full officer's pay to 150 competent men for service on the eastern front

Louis L Seaman, M D, New York
247 Fifth Avenue

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed Every letter must contain the writer s name and address but *these will be omitted on request*

ESSENTIAL ALKALINURIA

To the Editor —Can you give any information as to the cause and treatment of essential alkalinuria? If continued will it cause irritation of the deeper urinary tract? H R

Answer —Alkalinity of the urine is often a physiologic phenomenon due to ingestion of a food rich in vegetables or of alkaline mineral waters It also occurs during the so called 'alkaline tide" after a meal Pathologic "essential alkalinuria' results from various diseases of the intestinal tract the commonest of which is fermentative dyspepsia It is frequently associated with a marked degree of neurasthenia and there is often disorder of the sexual organs As the condition produces a turbidity of the urine, it is apt to be regarded as a sign of loss of power" by the patient and drives him frequently into the hands of a quack Alkaline urine is also present in some cases of cancer of the alimentary tract In children there is a special liability to alkalinuria owing to the excretion of an undue amount of calcium by the kidneys the normal excretion by the colon being in these cases much decreased This form has been found occasionally but by no means invariably, with colitis

So far as the alkalinity of urine is concerned, the principal dangers are the formation of calculus, and that referred to above of the effect on the patient's mind

Treatment should be directed to the cause when known—flatulent dyspepsia neurasthenia etc —by tonics and the usual indications in regard to diet Specifically the one drug which seems to increase the acidity of the urine with any certainty in a way to meet this condition is acid sodium phosphate In some cases in which there is an excessive excretion of calcium by the kidneys diet low in calcium has been recommended, but the rationale is not obvious

METHOD OF COUNTING CELLS OF CEREBROSPINAL FLUID

To the Editor —Please describe the method in detail of counting the cells of the cerebrospinal fluid that is not a differential count, but the number of cells per cubic millimeter R K

Answer —The following mixture is employed for staining the white and dissolving the red cells Methyl violet 0 2 gm, glacial acetic acid 5 c c, water to 100 Fill the blood-counting pipet with stain to the mark I and then fill to mark II with uncentrifuged cerebrospinal fluid Shake thoroughly, let stand for five minutes and count, using a Fuchs-Rosenthal counting chamber The ruled surface of the cell contains 3 2 c mm of fluid Count all of the white cells in the entire ruled area, multiply by 11 and divide by 32 The result is the number of cells per cubic millimeters, which varies from 1 to 10 normally

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arkansas Regular, Little Rock, Nov 14 Sec, Dr T J Stout, Brinkley Homeopathic Little Rock, Nov 13 Sec, Dr Scott C Runnels, 900 Scott St, Little Rock, Eclectic, Little Rock, Nov 14 Sec Dr C E Laws 712 Garrison Ave Fort Smith

Connecticut Homeopathic New Haven, Nov 14 15 Sec, Dr F C M Hall, 82 Grand Ave, New Haven, Eclectic, New Haven, Nov 14 Sec Dr T S Hodge 19 Main St Torrington

Florida Homeopathic Jacksonville Nov 10 Sec, Dr J B Griffin, St Augustine

Louisiana New Orleans Nov 30 Dec 2 Sec, Dr E L Leckert, 716 Macheca Bldg New Orleans

Maine Portland Nov 14 15 Sec, Dr Frank W Searle 776 Congress St, Portland

Massachusetts Boston Nov 14 16 Sec, Dr Walter P Bowers, Room 501 No 1 Beacon St Boston

Mississippi Jackson Oct 24 25 Sec, Dr J D Gilleylen Jackson

Nevada Carson City Nov 6 Sec Dr S L Lee Carson City

South Carolina Columbia Nov 14 Sec Dr A Earle Boozer, 1806 Hampton St Columbia

Texas Fort Worth Nov 14 16 Sec, Dr J S McCelvey, Temple State Bank Blog, Temple

West Virginia Parkersburg, Nov 14 Sec, Dr S L Jepson, State Health Commissioner Charleston

Arkansas Homeopathic June Report

Dr Scott C Runnels, secretary of the Homeopathic State Medical Board of Arkansas, reports the oral, practical and written examination held at Little Rock, June 1-3, 1916 The total number of subjects examined in was 12, total number of questions asked, 120, percentage required to pass, 75 The total number of candidates examined was 9, all of whom passed One candidate was granted a reregistration license by examination The following colleges were represented

PASSED College	Year Grad	Per Cent
Hahnemann Medical College and Hospital Chicago	(1908)	80 3
Hahnemann Medical Coll of the Kansas City Univ	(1902)	88
Southwest School of Med and Hosp	(1916)	77 87, 89 2 91 7 91 7 92 3 92 9

Iowa June Report

Dr G H Sumner, secretary of the Iowa State Board of Medical Examiners reports the written examination held at Iowa City, June 8 10, 1916 The total number of subjects examined in was 8, total number of questions asked 100, percentage required to pass 75 The total number of candidates examined was 50 of whom 48 passed and 2 failed Seven candidates were licensed through reciprocity The following colleges were represented

PASSED College	Year Grad	Per Cent
Chicago College of Med and Surg	(1915) (1916)	90 1 92 85 1
Hahnemann Med Coll and Hosp Chicago	(1916)	91
Northwestern University	(1902) (1914) (1916)	91 5 88 87
Rush Medical College	(1901) (1914) (1915)	85 2 91 89
University of Illinois	(1916)	88 5 91, 91 1
Indiana Medical College	(1907)	96
State Univ of Iowa Coll of Med	(1890) (1916)	76 85 6 88 9, 88 9, 89 89, 89 90 90 90 90 90, 90 2 90 2, 90 5 90 6 90 9 91 91 91 91, 92, 92 92 1 93 93 4 93 4
Johns Hopkins University	(1907) (1914)	86 93
Harvard University	(1896)	87 8
Tufts College Medical School	(1915)	91 2
Barnes Medical College	(1902)	85 5
John A Creighton Medical College	(1913)	92
University of St Joseph, Beirut	(1903)	80 5
FAILED		
Bennett Medical College	(1909)	69 9
Homeopathic Medical College of Missouri	(1903)	66

LICENSED THROUGH RECIPROCITY College	Year Grad	Reciprocity with
Rush Medical College	(1881)	Minnesota
University of Kansas	(1906)	Kansas
National University of Arts and Sciences	(1914 2)	Missouri
Washington University	(1914)	Missouri
John A Creighton Medical College	(1915 2)	Kan, Neb

South Dakota July Report

Dr Park B Jenkins, secretary of the South Dakota State Board of Health and Medical Examiners, reports the practical and written examination held at Deadwood, July 11-12, 1916 The total number of subjects examined in was 13, total number of questions asked, 105, percentage required to pass, 75 The total number of candidates examined was 14, of whom 13 passed and 1 failed The following colleges were represented

PASSED College	Year Grad	Per Cent
Atlanta College of Physicians and Surgeons	(1900)	84 1
Bennett Medical College	(1909)	78 5
Chicago College of Medicine and Surgery	(1916)	86 1
Hahnemann Medical College and Hospital Chicago	(1909)	87 3
Loyola University	(1916)	87 7
Northwestern University	(1916)	90 7
Rush Medical College	(1915) (1916)	85 4, 85 1
Drake University	(1909)	79 1
Baltimore Medical College	(1909)	81 2
Johns Hopkins University	(1912)	84 3
University of Minnesota	(1914)	85 9
Jefferson Medical College	(1913)	77 5
FAILED		
John A Creighton Medical College	(1912)	71 5

Miscellany

POLIOMYELITIS ON THE CROW RESERVATION

JOSEPH A MURPHY, M D
Medical Supervisor Indian Office
Washington D C

In the course of an epidemic of poliomyelitis on the Crow reservation in Montana, I noticed that contact with previous cases either in the incubation or in active stages seemed to play an important part in the spreading of the epidemic A special effort was made to trace the source of the disease in the individual cases Since the epidemic occurred only in a restricted district in the vicinity of Pryor, Mont, where contact with neighbors and others is more or less limited, it was more easy to trace than in more crowded communities

All of the Indians from the Pryor district were in Billings from July 10 to July 14, and practically all of them were also there August 2 to 6 (The occasions for these visits were in one case a council which was supposed to be held at Crow Agency for the purpose of discussing the opening of the reservation, the families traveling overland as far as Billings and remaining there while the men took the train to Crow Agency, and in the other case the attraction was a sort of wild west celebration) The Indians on these occasions were camped together on the edge of town, and were in intimate contact with each other, as well as with certain elements of the town population Whether or not the patients at Billings actually came in contact with the Indian camp is unknown, but it is believed that the original source of the disease was brought to them while at Billings Whether or not the Indians were in contact with any of the white patients at Edgar, the railroad point for Pryor, is also unknown The dates of onset of the known cases there are July 28, August 4, August 9 and August 16

The cases occurred in the following order

Case 1 —Leo F Indian aged 2 years, living about 1 mile from Pryor, was taken sick July 25, with high fever pain on motion and weakness of lower extremities, which later became paralyzed The fever continued about three days August 20 he was unable to walk or stand, and cried on being placed upright The left leg was paralyzed, and the right leg partially paralyzed The patient is showing gradual improvement

The source of the disease is believed to be contact in Billings The family was in Billings from July 10 to July 14

Known contact with subsequent cases Daniel L lived in same household but moved away He was taken ill August 7

Case 2 —Dan F Indian, aged 19 years living about one third mile from Pryor was taken sick, July 28 with fever, and pains in the limbs The fever ranged at about 104 for nearly a week The left arm showed marked weakness The flexors of the fingers the biceps and the deltoid were all affected August 25, he was able to pull 15 pounds against a spring balance with the left hand and arm and the muscles seemed to be gradually regaining their tone.

The source of the disease is believed to be contact in Billings

Case 3 —Frederick S, Indian, aged 3, was taken ill, August 1, with fever (103 F), and died August 2, with laryngeal paralysis

The source of the disease is believed to be contact in Billings The family was in Billings from July 10 to July 14

Case 4—Simpson S Indian aged 8 years was taken ill on the same date as his brother (Case 3) with high fever and somewhat similar symptoms but without paralysis He was believed to have an abortive case

Case 5—Gilbert G, Indian, aged 1 was taken sick August 3 with high fever irritability and marked trembling all over The child trembled constantly while awake The fever lasted about three days after which it was noticed that the legs were limp There was also marked tendency to throw the head back At present there is slight paralysis of the right leg and weakness of arms gradually improving

The source of the disease is believed to be contact in Billings The family was in Billings from July 10 to July 14 They are also related to the family of Patient 2 and visited there

Known contact with subsequent cases The G family with the baby took dinner and visited in the home of Patient 7 one week previous to the time Patient 7 was taken ill The G baby was taken ill three days after this visit

Indirect contact with subsequent cases Four members of the patient s family were at a dance at Pryor August 5 coming from direct contact with the patient

Case 6—Daniel L Indian aged 2½ years was taken sick August 7 on the road from Billings The most prominent symptoms were digestive disturbances He became paralyzed in both legs August 8 At present both legs are partially paralyzed The right leg has a slight patellar reflex The left leg has no reflex and is flaccid The patient s condition is improving

The source of the disease is possibly Billings The family was there from July 10 to July 14 and from August 2 to August 6 The patient was also in contact with Patient 1 who was taken ill July 25

Case 7—Julia S white aged 5 years was taken ill August 7 with high fever and pain in the back legs and chest The left leg became paralyzed August 8 At present there is paralysis of the flexor muscles of the left thigh The patient is gradually improving

The source of the disease is direct contact with Patient 5 and his family July 30

Indirect contact with subsequent cases Mutual visiting between this family and the family of Patient 8

Case 8—Amy B white aged 12 was taken ill August 11 and died August 14 She had high fever aching in the limbs and paralysis The cause of death was reported to be paralysis of respiration

The patient visited Billings July 31 and was also in indirect contact with the home of Patient 7 She attended a dance at Pryor August 5 at which four members of the family of Patient 5 were present The latter came from direct intimate contact with Patient 5 then at the height of the disease

Direct contact with subsequent cases The patient may have been in the incubation stage of the disease at the time of the dance Patients 11 and 12 developed the disease August 17 and both were present in contact with Patient 8 and the family of Patient 5 Patient 8 also paid a three hour visit in the home of Patients 10 13 14 15 and 17, August 10 when she was beginning to feel ill Following this visit five of the children became ill on the following dates Patient 10 August 14 Patient 13 August 17 Patients 14 and 15 August 20 and Patient 17 August 22

Case 9—Mary B Indian aged 5 years was taken ill August 13 with fever headache cough and pulmonary symptoms Paralysis was noticed August 18 The case rapidly became serious and was complicated by pulmonary infection After being critically ill for a week or more the patient began to improve At present, there is almost complete paralysis in both legs

The source of the disease was contact in Billings from July 10 to July 14 and from August 2 to August 8 The patient was possibly in contact with Patient 6 who was in Billings at the same time Furthermore the patient lives across the road from Patient 2 and there may have been direct or indirect contact between the two families

Case 10—Orpha M white aged 10 years was taken ill August 14 with fever and aching in the limbs and head There was no paralysis but there were symptoms similar to paralytic cases

The source of the disease was direct contact with Patient 8 August 10

Case 11—Rose L Indian aged 16 was taken ill August 17 with fever headache and aching of the neck and right arm The symptoms continued for several days but no paralysis developed

The source of the disease was contact with Patient 8 and the family of Patient 5 at the dance August 6 Members of the family of Patient 8 attended a party at the home of Patient 11 August 7 Patient 8 was invited but could not come on account of her illness which began on that date

Case 12—Elwood C white aged 19 years was taken ill August 17 with chill vomiting and spitting of blood He then felt better for a few hours but gradually became worse and had high fever and pain in the back and hips and was unable to swallow he was delirious while dozing On the third day the left deltoid became paralyzed The paralysis gradually traveled down the arm extending to the pectoral muscles and diaphragm Death due to paralysis of respiration occurred on the third day of the disease

The source of the disease was contact with Patient 8 and with members of the family of Patient 5 at the dance at Pryor August 5 The patient lived in an isolated section of the reservation and is reported not to have been away from home at any time except when he attended the dance at Pryor, August 5

Case 13—Wayne M white, aged 2 years was taken ill August 17 with fever (101 4) the pulse was 162 there were restlessness and evident weakness of the left leg The mother stated that the child had a fall and injured the leg but there was no bruising or evidence of trauma The fever lasted four days The left leg became slightly paralyzed but showed gradual improvement

The source of the disease was contact with Patient 8, August 10 also with Patient 10 in the same home

Case 14—Zelda M white, aged 13, was taken ill, August 20 The temperature was 103 2 There were headache sore throat and aching all over The patient hated to be moved She had a slight chill at onset The tonsils were enlarged but not inflamed The fever lasted three days, gradually reaching normal Both legs were weak, and on first attempting to stand the patient fell over Strength in the legs quickly improved but the patellar reflexes were absent for a few days

Case 15—Verne M white aged 6 was taken ill August 20 with fever and aching in the body and limbs The temperature gradually became normal after a few days There were no paralytic symptoms

The source of the disease was contact with Patient 8, August 10 and with Patient 10

Case 16—Wilson L, Indian aged 14 months was taken ill August 21, with fever, restlessness and irritability August 22 the temperature was 101 4 the feces were soft there was coryza there were rales in the chest The right eye turned up and in toward the nose at times There was paralysis of the right side of the face It was impossible to close the right eye Milk dribbled from the right cheek The high temperature lasted two days gradually becoming normal but paralysis of the face continued with very slight improvement The child is now apparently normal except for the facial paralysis The mother thought there was slight weakness of the right arm and leg but was not positive

The patient was in Billings from August 4 to August 7 He is related to the family of Patient 9, which was in Billings at the same time Patient 9 was taken ill August 13 and the family of Patient 16 was in contact

Case 17—Ross M white aged 4 years was taken ill August 22 with fever The temperature was 103 the pulse 140 The patient vomited and had pain in the back and the right leg The back was slightly tender the throat slightly red The high temperature lasted two days gradually returning to normal There were no paralytic symptoms

The source of the disease was contact with Patient 8 August 10 and with cases in his own family

While there may have been other means responsible for the spread of the disease, it seems apparent that actual contact with patients having active cases, or cases in the incubation stage of the disease has largely been responsible for the spread of poliomyelitis on the Crow reservation It is worthy of note that no Indians from other sections of the reservation were in Billings except the Pryor Indians and the disease has been confined to the group which were associated with each other there Spread to the white persons on the reservation seems to have been largely from Indian sources The family of Patient 5 had a breakdown on the road near the home of Patient 7 and while the wagon was being repaired they were invited to take dinner there Patient 5 was in the incubation stage of the disease at the time, and exactly one week after this visit, Patient 7 was taken ill with the disease Whether Patient 8 was the source of infection at the dance at Pryor August 5, or the infection was spread by the members of the family of Patient 5, who left the bedside of Patient 5 and went direct to the dance, is impossible to say It is undoubtedly true however, that the dance was responsible for the infection of Patient 12 who had been isolated at home for months and whose only touch with the sources of infection was his attendance on the dance The infection must have been very virulent, since two of the persons who attended this dance died

It is also of interest to note the infection in the family of Patients 10 13 14 15 and 17 There are seven children in this family and following the visit of Patient 8, five of them after an average incubation period of seven and a fraction days were taken ill with abortive symptoms of the disease

Dr Benson of Fromberg who had charge of a number of patients at Edgar, some of whom I saw and also Dr Arnold of Billings reported a number of cases of abortive symptoms At Edgar there were two abortive cases in one family Several days later a third child was taken with the same symptoms but developed paralysis of both arms and legs I feel confident that the infection in the family of Patients 10 13, 14, 15 and 17 was the abortive type of infantile paralysis

Every home in the Pryor district was visited, and all members of the family examined for the disease Strict quarantine was maintained on the entire district, and all the Indians compelled to clean up their homes and keep their children at home Only the men were permitted to go out, and then only on urgent business This seems to have been successful in checking the further spread of the disease

Medicolegal

When Vaccination May Still Be Required

(Bright vs Beard (Minn) 157 N W R 501)

The Supreme Court of Minnesota reverses a judgment obtained by the plaintiff for alleged violation by the defendant, a member of the board of education of the city of Minneapolis, of Section 2900 of the General Statutes of 1913, which provides that any member of any public school board or board of education of any district, who, without sufficient cause, etc, shall vote for the exclusion from school privileges of any person entitled to admission to the schools of such district, shall forfeit to the party aggrieved $50 for each offense It appeared that a case of smallpox had developed in the public school wherein the plaintiff was a pupil, and that the defendant, as a member of the board of education, had voted for a resolution which, in effect, required the pupils in that school who had been exposed to the contagion to be vaccinated and in default thereof to be excluded from attendance until the lapse of two weeks The court says that the defendant could not be penalized for the act of the health commissioner or the superintendent of the schools The court also thinks it fairly appeared that the trial court's finding of want of sufficient cause for the defendant's affirmative vote on the resolution adopted by the board of education was based on an erroneous conception of the effect of a statute and not on facts, assuming that the plaintiff was a pupil covered by the resolution From the time said Section 2900 appeared on the statutes in 1877, down to the enactment of Chapter 299 of the Laws of 1903 (which was revamped and inserted by the revisers in subdivision 8 of Section 2131 of the Revised Laws of 1905 Section 4640 of the General Statutes of 1913), no one could have made a plausible contention that exposure of a school pupil to a virulent contagious disease such as smallpox, did not constitute sufficient cause for excluding such pupil from attendance during the period that there was danger of imparting such disease by such pupil to others in the school Did said Chapter 299, Laws of 1903 change the situation? The court thinks not That law was designed to prohibit compulsory vaccination, and also to prohibit school authorities from making vaccination a condition precedent to the enjoyment of school privileges except during the prevalence of an epidemic of smallpox It has nothing to do with the status of school pupils who have been exposed to a contagious or infectious disease whether of smallpox, scarlet fever, diphtheria, or the like It is unreasonable to surmise that this law of 1903 was intended to prevent school authorities from taking the usual precautions to prevent the spread of contagious diseases through pupils who have became exposed to contagion The temporary exclusion from school attendance of such pupils is still left to the good judgment of the authorities The resolution here in question went no further than to deal with pupils who had been exposed to contagion from the dread smallpox The facts found showed that one of the pupils attending the school became a victim of the disease and had exposed others therein to contagion This furnished sufficient cause for the adoption of the resolution on which the defendant voted, and the finding that no epidemic of smallpox then prevailed in the city was not important In 1902 in State ex rel vs Zimmerman, 86 Minn 353, a regulation requiring children to be vaccinated as a condition precedent to attendance in a public school during an epidemic of smallpox was upheld as reasonably necessary And the exception in the law of 1903 recognizes the principles announced in the decision A person carrying the germs of infection may spread the disease perhaps as readily before the disease has become epidemic as after it has arrived at that stage Unless the power still remains in the school authorities to exclude temporarily those from school attendance who have come in contact with smallpox patients we may expect epidemics of that disease to be started in short order in the public schools The court does not believe a reasonable construction of the statutes herein referred to invites such calamities

Society Proceedings

COMING MEETINGS

American Public Health Association, Cincinnati Oct 24 27
Clinical Congress of Surgeons Philadelphia Oct 23 28
Kentucky State Medical Association Hopkinsville Oct 24 27
Southern Medical Association, Atlanta Nov 13 16
Virginia State Medical Society Norfolk Oct 24 27

INDIANA STATE MEDICAL ASSOCIATION

Annual Session held at Fort Wayne Sept 28 and 29 1916

The President, Dr George F Keiper, Lafayette, in the Chair

Advanced Ectopic Pregnancy

Dr Edmund D Clark Indianapolis A woman, aged 28 was in her fourth pregnancy at term Pregnancy was apparently normal except for an unusual amount of abdominal pain and nausea Fetal movements were observed between the fourth and fifth months, and continued in a normal way until three weeks before her admittance to the hospital At the end of the tenth month an attempt to bring on labor resulted in an infection of the uterus, necessitating removal of the fetus placenta infected uterus and tubes The mother made an uneventful recovery She is now in perfect health

DISCUSSION

Dr Charles M Mix, Muncie The primary pain of ruptured ectopic pregnancy is said to be in the lower abdomen That has not been my experience In the majority of cases it has been epigastric or umbilical, and it settles down into the lower abdomen exactly as the primary pain of appendicitis settles down into the right iliac fossa

Dr Charles Stoltz South Bend It is very essential to recognize cases of tubal or extra-uterine pregnancy early, and then operate to guard against danger which may follow I do not suppose any one would recommend waiting if he know there was a tubal pregnancy

Dr J W McCausland, Fort Wayne In the last five months I have seen eight cases of advanced ectopic pregnancy with rupture Seven patients left the hospital recovered, while the eighth died The great difficulty in ectopic pregnancy is to make the diagnosis After the diagnosis has been made the surgery is easy

Dr H A Duemling Fort Wayne I recall the case of a woman, aged 21 in which the diagnosis of ectopic pregnancy was made in the early months I saw the patient about two months later At this time the abdomen was filled with a large fluctuating tumor She had considerable elevation of temperature and a rapid pulse A diagnosis was made of suppurating ovarian cyst On opening the abdomen we found a full-term child

Dr H H Martin, Laporte The tendency to spontaneous hemorrhage is governed a great deal by the site of the rupture I had an experience with two cases illustrating that point The first patient was quite a large full-blooded woman about six or seven weeks pregnant Rupture occurred at 8 o clock in the evening, in probably fifteen minutes after the onset of the pain she was pulseless The patient was operated on at 11 o clock At that time it was impossible to count her pulse and she seemed to be dying The rupture occurred in the tube and right through the placenta There was an enormous amount of blood in the abdominal cavity, and it seemed as though the woman would bleed to death in a short time On going through the peritoneum the blood spurted up like a fountain The second patient was seized with a sudden pain she was operated on four hours after the onset of the pain The hemorrhage had been entirely from the fimbriated end of the tube and was not large in amount The pain was not as severe as in the other cases

Dr A M Hayden Evansville The mere fact that a patient bleeds to death warrants us in operating in all of these cases as soon as the diagnosis is made The ideal time to operate is before rupture

Dr A. S Jaeger Indianapolis I saw a case two months advanced in pregnancy in a married woman who absolutely denied pregnancy and claimed that hemorrhage was due to the fact that she had some menstrual disturbance which necessitated a vaginal examination She gave a history of never having stopped normal menstruation Her word was accepted, and a diagnosis was made of hemorrhage into the broad ligament Operation revealed a three months' pregnancy with the placenta attached to the posterior aspect of the broad ligament The placenta had become partially detached and the hemorrhage was the symptom

Dr **Alfred F Schmauss**, Alexandria In cases of extra-uterine pregnancy, operation should be performed before rupture takes place Valuable time is lost in trying to make a positive diagnosis

Dr **J W Shafer**, Lafayette The time to operate is before rupture has taken place, but many patients come to us only as the result of hemorrhage The incidence of fibroid tumor and extra-uterine pregnancy has been remarkable to me

Dr. **D S Wiggins**, Newcastle In the last two years I have seen ten cases of tubal pregnancy In six of these, rupture had taken place Four were unruptured, and operation was performed for twisted pedicle, appendicitis or something else While it is ideal to operate before rupture, we do not frequently see these patients before rupture has taken place Whether the surgeons would do any better in diagnosis than the general practitioner is a question

Dr **George R Andrews**, Muncie In a case of abdominal pregnancy, the placenta was attached to the posterior aspect of the broad ligament Another woman manifested nothing unusual in the course of her gestation, except that she did not go to labor at what was supposed to be full term She went on for about two months when she was referred to me I recognized an abdominal pregnancy, and operated finding a dead child This woman had a fibroid tumor of the uterus

Dr **Charles D Terry** South Bend No man can make a diagnosis of tubal pregnancy by vaginal examination, bimanual or otherwise, and feel certain as to the diagnosis if he ignores the history of the case All cases of tubal pregnancy give a distinct and positive history as regards menstruation There is an irregularity as to time or amount and character of the discharge, the discharge being mucous or slimy, which suggests tubal pregnancy

Dr **John Sluss**, Indianapolis We all are agreed that immediate operation in these cases is indicated, but I do not regard rupture of a tubal pregnancy so grave an emergency as I formerly did It is exceptional that an artery of any size is torn or ruptured The symptoms of gravity in the early stages of rupture are very frequently those of shock It is impossible in such cases to differentiate between shock and hemorrhage

Conservatism in Cesarean Section

Dr **J W Shafer**, Lafayette Cesarean section is indicated only in cases in which the pelvis is too small to admit of delivery of a living child Eclampsia, placenta praevia, malpresentations and tumors are indications for cesarean section only when accompanied by other complications "Once a cesarean section, always a cesarean section," is a safe and sane axiom A pelvis justo minor to the extent of 5 cm with dead child is a positive indication for cesarean section, except when the patient has been submitted to frequent examinations and attempts at delivery, or is exhausted by prolonged labor, dilatation is partial or complete, membranes are ruptured the child is injured by instruments, and there are signs of weakness of the child Then cesarean section is contraindicated, and craniotomy and embryotomy are methods of choice and safer for the mother

DISCUSSION

Dr. **A S Jaeger**, Indianapolis A justo minor pelvis is not the only indication for cesarean section There are many other indications, largely individual, which are just as absolute Cesarean section in eclampsia is a question of personal opinion and experience We must not adapt the patient to the operation, but rather adapt the operation to the patient If a patient is seen early enough, or if the physician has nursed the patient along, the patient may not have to undergo a cesarean section for eclampsia

Dr **Thomas B Eastman**, Indianapolis Anybody can do a cesarean section, or can learn to do it, in ten minutes, provided he knows how to be clean, but it requires more skill to do a version or to make some of these forceps deliveries

Dr **Louis Burkhardt**, Indianapolis It is not necessary to perform so many cesarean sections, if the practitioner is skilled in doing version, many cesarean sections can be avoided

Dr **Charles C Terry**, South Bend It requires more courage on the part of a surgeon to be conservative than it does to be radical What would be the objection to the principle, "once a cesarean section always a cesarean section"? Where a woman has difficult labors, requiring long forceps deliveries, it would be better to have a cesarean section done, but we should be careful to make the correct diagnosis

Hyperthyroidism and Its Relation to Certain Pelvic Disorders in Women

Dr **Thomas B Eastman**, Indianapolis There is a close physiologic interrelationship between the ovaries and the thyroid, with the result that in certain circumstances any affection of either one may produce abnormal conditions in the other Thyroid secretion and ovarian secretion do not supplement each other, they neutralize each other

DISCUSSION

Dr **Maurice I Rosenthal**, Fort Wayne The interrelationship between the genital organs and the thyroid is nicely shown in some cases of exophthalmic goiter in which pregnancy takes place In two cases in women about two or three months pregnant, I was afraid to operate because of symptoms referable particularly to the heart I watched one woman for quite a while, I gave her the rest cure About the second month the circulation of the heart had improved to such an extent that we did a thyroidectomy She went along nicely with her pregnancy and was delivered at full term That experience has occurred twice in my practice

Dr **H A Duemling**, Fort Wayne The fact that the thyroid is more or less closely associated with the sex glands presents itself in various ways, such as the enlargement of the thyroid in young girls at puberty, and in females generally at the time of menstruation

Dr **Charles M Mix**, Muncie Infection may be the activating and underlying cause of this disturbance Not long ago some man, whose name I have forgotten, demonstrated streptococci in the so-called cystic ovaries Cystic ovaries, with dysmenorrhea, and hyperthyroidism, especially in a goitrous region, may be associated conditions in which the streptococcus is the active factor

Dr **A F McDonald**, Warsaw Some years ago our attention was called to cases of amenorrhea at times following confinement and associated with a gain in weight, and also occurring in young girls who gained appreciably in weight and had amenorrhea I have given these patients thyroid extract, and I can recall at present possibly half a dozen cases in which loss of weight and a free menstrual flow resulted I mention this as showing the connection between the thyroid and the ovary

Dr **H O Bruggeman**, Fort Wayne The ovaries are not the only sex glands The pineal gland is absolutely a sex gland, and tumors of this gland exert a profound influence on the development of the sexual organism The same is true of the hypophysis There is also an intimate relation between the thymus and thyroid

Dr **Miles F Porter**, Fort Wayne Regarding the influence of hyperthyroidism on pregnancy and vice versa, my experience is in accord with what has been said A patient with extreme hyperthyroidism stops menstruating She also loses flesh She goes on until her thyroid is used up, her menses do not return, but her flesh does A pregnant woman without a thyroid slightly hyperactive is in considerable danger from toxemia or, if she goes through labor, from infection Our observations teach us that a slight hyperactivity of the thyroid is a normal condition to a woman bearing children if she has to carry that child without undue risk On the other hand, a woman with an extremely hyperactive goiter may have hemorrhages and lose her child When she has her goiter removed, or a part of her goiter, she regains her health and becomes mother to a family Many of these things seem very contradictory

Occlusive Drainage for Empyema of the Chest

Dr Maurice I Rosenthal Fort Wayne The diaphragm itself offers sufficient motive power to evacuate the chest, and if resort is had to a proper valve air can be prevented from entering To accomplish this I devised the following operation The tube is inserted into the chest by means of a specially constructed trocar and cannula, it is fixed to the chest by means of adhesive plaster It is left hanging dependent about 24 inches to act as a discharge tube and at the same time a siphon The end is cut at a long angle Over this is placed a very thin rubber tube somewhat larger than the drainage tube This tube is tied in place so that it overhang the drain about 3 inches The thin tube will act as a valve excluding air from the chest on expiration and allowing the escape of pus and consequent approach of the lung to the ribs on each inspiration The thinner the tube the better the valve action Sterile adhesive plaster should be used as it is much less irritating about the wound The operation can be performed in about one minute under local anesthesia When the cavity is quite obliterated and there still persists a slight amount of drainage the tube is removed and a braided bundle of silkworm gut is substituted In a few cases I have occasionally poured from one-half to 1 ounce more or less of sulphuric ether through the tube into the chest to act as an antiseptic

(To be continued)

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS

Twenty Ninth Annual Meeting held at Indianapolis Sept 25 27 1916

The President, Dr Hugo O Pantzer, Indianapolis, in the Chair

Appendicular Abscess, Complicated by Hemorrhage and Death

Dr Magnus A Tate Cincinnati This condition is rare The patient was a young woman who had her first attack The abdomen was opened through the right rectus, and drainage was profuse for six days At the end of the eleventh day her condition was good On the twelfth day she complained of pain and nausea On the morning of the thirteenth day there was hemorrhage from the wound and on the fourteenth day her condition was alarming death occurring the same evening Necropsy revealed a gangrenous sac the size of a dollar in the mesentery, probably the site of hemorrhage

DISCUSSION

Dr Albert Goldspohn Chicago After a normal course following a vaginal hysterectomy in a septic case the patient began to bleed about two weeks after the wound had nearly closed After futile attempts to stop the hemorrhage by local tamponning and the use of clamps I saved the patient s life by doing an abdominal section and ligating the internal iliac arteries

Drainage for Pus Conditions in the Pelvis During Pregnancy

Dr Francis Reder, St Louis The most frequent cause of a pus accumulation in the pelvis during pregnancy is a diseased appendix If the pains and frequent indispositions which usually accompany the pregnant state are not promptly interpreted the primary clinical picture of appendicitis may be recognized only when the more serious phases of the disease have manifested themselves Before any pus formation has taken place the pulse and temperature may show little or no change The pain is usually located in the epigastric region, and remains there until the disease has reached the stage when all pain ceases Even in an advanced pregnancy a readily recognizable rigidity of the right rectus is seldom encountered, and only exceptionally does palpation reveal a tender spot over McBurney's point Nausea and vomiting count for naught because they are frequently associated with the toxemia of pregnancy Pregnancy favors the rapid development of appendicitis, and pus may be found in the pelvis in a very short time The most satisfactory and convincing evidence as to the presence of pus in the pouch of Douglas can be obtained by a rectal examination In the treatment of a pelvic abscess complicating pregnancy, two factors become absolutely axiomatic first, prompt recognition of the collection of pus and, second the simplest surgical measure for relief An abdominal operation can be done with less risk of interrupting pregnancy before the fourth month than after Great antipathy still exists as to attacking a pelvic abscess through the rectum, largely because of the likelihood of infecting the abscess cavity Patients relieved in this manner have usually suffered no untoward results, and their recoveries have been satisfactory

DISCUSSION

Dr Herman E Hayd Buffalo In cases of appendicitis complicated with pregnancy, miscarriage is apt to take place Undoubtedly a bacteremia is established and the fetus is made ill by the infected blood The point brought out of opening the abscess through the rectum is a good one

Dr W A B Sellman, Baltimore One method of dealing with these abscesses is that suggested of opening through the vagina posteriorly into the culdesac and by that means reaching the abscess The second method is opening the abscess through the rectum In two cases I selected the abdominal route, draining the abscess cavity My experience is that it is necessary to drain the cavity for a long time

Dr Roland E Skeel, Cleveland As regards making a puncture through the rectum in these abscesses, I have used that procedure for ten years but I would emphasize the fact that there must be an abscess cavity If there is no abscess cavity with a thin wall, it would be dangerous on account of peritonitis or rectal infection I can recall cases of appendicular abscesses which opened and drained through the rectum spontaneously

Case of Rupture of Uterus, Sepsis, Operation, Recovery

Dr Rufus B Hall Cincinnati My patient was operated on thirty-seven days after delivery She made a slow but satisfactory convalescence and is now perfectly well Rupture of the uterus during labor is a rare and dangerous accident From the history of the case and the subsequent findings at the time of the operation, I ask the question if it is possible that the unrecognized small rupture causing leakage into the abdomen might not be more frequent than is generally believed My case would suggest that as a possibility because there were no symptoms which would suggest rupture and it was not suspected until revealed at the time of the operation

DISCUSSION

Dr Henry Schwarz St Louis There should be some history accounting for cicatricial tissue or some weakening in the uterine wall Without such a history and without the symptoms of scar tallying with the symptoms of rupture of the uterus during delivery, I should hesitate to accept this case as one of rupture of the uterus occurring at the time of delivery

Dr Edward J Ill Newark N J I do not think Dr Hall s patient had a rupture of the uterus Rupture of the uterus always occurs in the lower and hardly ever or never in the upper segment He speaks of no blood being in the abscess There must have been some blood there if the woman had a rupture of the uterus I have seen many cases of chronic suppurative metritis following labor in which abscess occurred near the anterior horn, and after being opened and drained the patient got well, provided it was a single abscess

Dr J Henry Carstens Detroit Might not this case have been one of embolism of the uterus in which the muscle tissue degenerates slowly breaks loose, and finally there results an infection of the abdominal cavity?

Dr Roland E Skeel, Cleveland Rupture of the uterus belongs to one of two categories—those cases in which there is a disproportion and after a prolonged labor there is a thinning out of the lower uterine segment and rupture occurs in the uterine cavity In the other cases, in which degeneration of the uterine muscle takes place, rupture may occur early in labor anywhere in the body of the uterus

Dr Sylvester J Goodman, Columbus In one of two cases which occurred in our service in the last few months, the diagnosis was not made until a week after the rupture occurred Infection took place with general peritonitis and pus everywhere The abdomen was opened, and a dead macerated fetus removed, hysterectomy done and abdominovaginal drainage instituted The woman recovered The other was a case in which the diagnosis was made promptly by the attending physician Appendectomy was done, abdominovaginal drainage instituted, and the patient made an uneventful recovery

Dr O H Elbrecht, St Louis If you recall the different types of bicornate uteri and the different types of double uteri, occasionally you will see one that is open or very thin, and there is a disproportion between the one uterus and the other, the one being parasitic to the other, the tubes and ovaries being only two in number There is a possibility that Dr Hall's case was one of this type, as the patient did not manifest any of the classical symptoms of a typical rupture of the uterus

Dr James E Davis, Detroit Cullen some years ago reported 150 cases of cysts occurring from the wolffian duct remains between the anterior part of the uterus and bladder Last year I had such a case The cyst had become infected—in fact, most of these cysts become infected and are recognized following obstetric deliveries In my case the woman manifested a septic temperature, beginning on the fourth day, which continued for about eight weeks When she came to operation, an abdominal section was done and nothing was found to account for the conditions until I began to separate the bladder from the anterior portion of the uterus and then I opened into a cystic cavity, which was infected, and which I diagnosed as belonging to this type of cyst Dr Hall's case might belong to this class of cases

Dr E Gustav Zinke, Cincinnati There is an absence of history of injury, and if a rupture had taken place it was probably spontaneous, owing to some disturbance in the uterine wall There is a possibility that the placenta in some of its parts had probably undergone chorionic epitheliomatous degeneration and had destroyed the uterine musculature of that region It may have been very limited in extent

Dr Charles L Bonifield Cincinnati The woman might have received some injury to the uterus through the abdominal wall which may have caused a limited thrombosis

Rupture of the Uterus in Cesareanized Women

Dr John Norval Bell, Detroit A cesareanized woman is always in danger of uterine rupture in subsequent pregnancies, and should be under careful observation for the last half of her gestation In case her puerperium following the first section was afebrile, she may be allowed to go to term if she can be in the hospital for the last month of gestation, otherwise the labor should be anticipated and operation done at least two weeks prior to term Implantation of the placenta over the scar area undoubtedly increases the danger of rupture, as does also a febrile puerperium following operation

Fibromyoma Uteri and Cardiovascular Disease

Dr Ben K McClellan Xenia, Ohio I have studied twenty-six cases of fibromyoma uteri, nine of which had well-marked cardiovascular complications In each case the diagnosis of the latter condition was confirmed by a competent internist Of the nine, only two gave any history of other adequate cause than the presence of the fibroid uterus, these two gave distinct histories of a previous acute pelvic infection Two of the nine patients died, one within a few hours following a difficult removal of a very large multiple fibroid of many years' growth, which had undergone cystic degeneration, and was complicated by very extensive adhesions to the surrounding viscera The heart behaved badly during the operation, and death was undoubtedly due to shock, which in turn was caused by extreme traumatism in the presence of heart and blood vessels already handicapped by changes due to the presence of the chronic uterine disease The other patient, in whose case there were pronounced cardiac and renal complications, was carefully prepared for the operation, which was not difficult, although the tumor was of extreme size The patient made an exceptionally good recovery up to the eleventh day, but died without warning, while sleeping after a dinner which she had greatly enjoyed No doubt the cause of death was brown atrophy of the heart In neither of these cases could a necropsy be secured, but both physical examination and the clinical history were enough to establish the fact of serious cardiovascular changes The remaining seven patients have all recovered with symptomatic relief from cardiac trouble, and only three, on careful physical examination, show some hypertrophy

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

Boston Medical and Surgical Journal

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1 Treatment of Diabetes F Fremont Smith Washington, D C —p 476

2 Insufficient Oxygen Supply as Factor in Disease F H McCrudden, Boston —p 480

3 Roentgentherapy in Hypertrophy of Thymus. Report of Case P H Cook, Worcester —p 483

Bulletin of Johns Hopkins Hospital, Baltimore

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4 *Treatment of Neurasthenia A F Riggs Stockbridge Mass —p 281

5 *Gastro Intestinal Findings in Case of Sprue, Treatment Based on These Findings T R Brown, Baltimore —p 289

6 Case of Atrophy of Fatty Layer of Skin Preceded by Ingestion of Fat by Large Phagocytic Cells—Macrophages T C Gilchrist and L W Ketron —p 291

7 *Tetanus Following Gunshot Wounds J A C Colston Baltimore —p 294

8 Gas Gangrene — Its Course and Treatment K Taylor Paris —p 297

9 *Prognostic Value of Blood Cultures in Erysipelas T P Sprunt, Baltimore —p 300

10 History of Discovery of Secretory Glands and Their Function M Frank, Chicago —p 302

4 **Treatment of Neurasthenia**—Riggs is convinced that prolonged rest had regularly done his patients more harm than good In fact, the more rest they had had, the more tired they seemed to have become On the other hand those who had had an exercise cure were in much better condition, not only physically but mentally as well As to the cause of the condition, Riggs believes that neurasthenia is primarily a mental disorder that the disorder, in nearly all cases, is originally independent of any and all bodily conditions and that it exists, in spite of a structurally normal central nervous system To all intents and purposes, then, the neurasthenic is an organically normal individual He is sound of mind and body, but this normal apparatus of his gets out of working order because it is unskilfully used and, therefore, gets out of internal adjustment and also out of adjustment with what should be its work Were neurasthenia exhaustion, rest would cure it It does not. Were it an inherent weakness of the organism, not a single case could be cured Many cases are cured Were it due to physical disorders, then physical treatment of these disorders would cure it. The conclusion seems clear that neurasthenia is not weakness nor exhaustion, that it is neither a malady of the intestines, the heart, the stomach, nor a disorder dependent on structural change of the nervous system, and that it, therefore, cannot be cured by rest or by any other physical means It calls for psychotherapy primarily and for physical means only secondarily, and then only to combat the physical byproducts —whatever they may be Fundamental reeducation of the

patient is the weapon in which Riggs puts his greatest trust Occupation, both manual and intellectual, is one of the most important instruments of reeducation A thorough physical examination precedes treatment

As soon as the patients have acquired a good working modicum of self-control, and their physical condition has become satisfactory with as little warning beforehand as possible they are sent home on a trial trip, to apply their knowledge and the fruits of their practice to their own environment The stay at home varies from two and three weeks to six months or more in length—according to the case and the environment A return for treatment usually follows the trial trip The next home going is apt to be permanent, but is often followed in six months or a year by another and final visit of a few days Patients discharged two years and over, 129 No improvement 0 7 per cent , improved, 15 per cent , much improved 36 per cent , cured, 47 per cent Patients discharged three years and over, 91 No improvement, 1 per cent , improved 11 per cent , much improved, 30 per cent and cured, 57 per cent

5 **Gastro-Intestinal Findings in Case of Sprue**—The most striking features in Browns case were, first, the persistence of the complete absence of pancreatic secretions, not only during the stage of apparent illness but even after the patient felt and seemed absolutely well, second, the essential role of the constant administration of pancreatic extract by mouth in the therapy of the disease, third, that whatever the cause of sprue, and at present it seems probable that it is due to an infection with monilia, the lack of pancreatic secretion seems persistent and fundamental, the absence of gastric juice variable and accidental, fourth, that as long as the patient still suffers from this pancreatic achylia she can in no wise be considered as cured although clinically she is apparently well, and the ultimate outcome must still remain doubtful

7 **Tetanus Following Gunshot Wounds**—Colston endorses the use of intraspinal administration of magnesium sulphate in cases of tetanus in which a fatal outcome is to be feared from spasm of the glottis or from exhaustion

9 **Blood Cultures in Erysipelas**—Five patients of the thirty-four cited by Sprunt showed a streptococcus bacteremia Of these four died The fifth had very few organisms in the blood, no other demonstrable complication and recovered after a prolonged febrile course of thirty-two days the longest of the series The only other fatality occurred in a case in which a blood culture was not made but in which metastatic lesions suggest that a demonstrable bacteremia existed There was no death among the patients whose blood was sterile, though several complications were encountered, namely, suppuration, phlebitis, erysipelas migrans

Colorado Medicine, Denver

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11 *Abdominal Pain J R Espey Trinidad —p 262
12 Treatment of Ununited Fractures by Use of Bone Graft E F Dean Denver —p 268
13 Control of Cancer F W Bancroft New York —p 273
14 Infantile Hygiene During Preschool Age K Lindsay, Boulder p 279
15 Records of Plague W H Crisp Denver —p 282

11 Abstracted in The Journal, Sept 30, p 1040

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18 Pathology of Syphilis E C Thrash Atlanta —p 87
19 Original Wassermann vs Noguchi Reaction for Diagnosis of Syphilis A H Bunce, Atlanta —p 92

Journal of Bacteriology, Baltimore

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20 *Preliminary Report on Synthetic Media C J T Doryland, Fargo N D —p 135
21 Significance of Voges Proskauer Reaction M Levine Ames Iowa —p 153
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23 Are Spore Forming Bacteria of any Significance in Soil Under Normal Conditions? H J Conn Geneva, N Y —p 187
24 Possible Function of Actinomycetes in Soil H J Conn Geneva N Y —p 197
25 Practical Observations on Titration and Adjustment of Culture Media B van H Anthony and C V Ekroth New York —p 209
26 New Species of Alcohol Forming Bacterium Isolated from Interior of Stalks of Sugar Cane Infested with Cane Borer Diatraea Saccharalis W L Owen, New Orleans —p 235

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29 Number of Colonies Allowable on Satisfactory Agar Plates R S Breed and W D Dotterrer Geneva, N Y —p 321
30 Modification of Hygienic Laboratory Method for Production of Tetanus Toxin H L Wilcox, New York —p 333
31 Method of Anaerobic Plating Permitting Observation of Growth H W Jones Washington, D C —p 339
32 *Testicular Infusion Agar Sterilizable Culture Medium for Gono coccus I C Hall Los Angeles —p 343

20 **Preliminary Report on Synthetic Media**—This paper deals both with synthetic nutrient solutions and with solid synthetic media formed by the precipitation of an agglutinant from compounds of known composition and structure Silica jelly is pronounced by Doryland to be the most suitable solid medium The method consisted essentially of dissolving chemically pure potassium silicate and chemically pure sodium silicate in water in sufficient amounts to give a concentration of 34 2732 gm of silicic acid per liter One half this concentration of silicic acid per liter gives a medium which will solidify in approximately five minutes, thus making a medium suitable for plating The mixture of sodium and potassium silicate gives us sodium and potassium salts in the final medium instead of only sodium salts, thereby lessening the danger of too great a concentration of sodium salt

The solid synthetic media were prepared in the following manner solutions of hydrochloric acid sulphuric acid and phosphoric acid were each standardized separately, against the sodium silicate and potassium silicate solution, so that 1 c c of each acid would just neutralize 1 c c of the silicate solution Whenever an organic acid such as formic, acetic lactic or tannic, etc was used as a source of energy it was made in sufficient concentration to just neutralize an equal volume of the silicate solution These acids, that is the hydrochloric acid, sulphuric acid, phosphoric acid and the organic acid, were then mixed together in such proportion that the resulting salts from the sodium and potassium silicate would be present in the final silicate medium in quantities approximately, inversely proportional to their osmotic action, thus giving a minimum osmotic pressure Before standardization the hydrochloric acid there was added to it 0 5 gm magnesium sulphate, 0 01 gm calcium carbonate or calcium oxid 0 01 gm of ferric sulphate and 0 01 gm of manganous sulphate per liter Ammonia nitrogen was added to the hydrochloric acid as ammonium sulphate Cyanid nitrogen was added to the hydrochloric acid as potassium ferricyanid Nitrite nitrogen was added to the neutral solution in the Petri dish, nitrate nitrogen was added to the acid mixture as nitric acid All the sources of nitrogen were added in proportion to give 1 gm of their respective salts per liter

When sterile 5 c c of the acid mixture was added to a sterile Petri dish, after which there was added 5 c c of the silicate solution The plate was then rotated to mix the two solutions thoroughly, and then inoculated If a nonacid compound was used as a source of energy (say glucose) a sufficient amount of a sterile aqueous solution, to give 10 gm per liter, was added at this point. The resulting silica medium was neutral to phenolphthalein and set firmly in approximately five minutes The growth of organisms on this solid medium resulted generally in quite typical colonies, although with a few organisms somewhat peculiar developments took place The liquid media used had a concentration similar to the above with the exception that silicic acid was absent

32 **Testicular Infusion Agar**—The formula followed by Hall in preparing testicular infusion agar for the growth of the gonococcus in preparing suitable vaccines is as follows 1 Mix 500 gm ground beef testicle from which the tunica vaginalis has first been stripped, with 1,000 c c distilled water 2 Soak overnight at room temperature 3 Heat to 50 C

Keep warm for one hour by placing in the incubator at 37 C 4 Boil, strain and restore to 1,000 c c with distilled water If in excess do not reduce by boiling since overheating is injurious 5 Add 2 per cent peptone (Witte's or Difco), 3 per cent agar chopped fine, 0 5 per cent glucose, 0 3 per cent acid sodium phosphate 6 Soak at least one hour to soften the agar Melt in the autoclave at 10 pounds pressure for thirty minutes 8 Titrate with phenolphthalein and add N/1 sodium hydroxid sufficient to neutralize if no unsaturated compounds were present 9 Check the titer by repetition Five c c should require from 1 0 to 2 0 c c N/20 sodium hydroxid to display color hot 10 Tube and sterilize in the autoclave at 10 pounds for thirty minutes 11 Slant or pour into plates

Journal of Immunology, Baltimore

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33 *Isolated Organ Lipoids as "Antigen" in Wassermann Test E S L'Esperance and A F Coca, New York —p 129
34 *Is Hyperleukocytosis Following Injection of Typhoid Bacilli into Immunized Rabbits Specific? H I McWilliams, New York —p 159

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35 Effect of Lecithin and Horse Serum on Hemolytic Action of Certain Peptones A A Epstein New York —p 183
36 Study of Strain of B Welchii Isolated in France Together with Some Notes on Gastric Ulcers M W Stewart and R West, New York —p 189
37 Human Sensitization R A Cooke and A Vander Veer, Jr, New York —p 201
38 *Study of Grouping Meningococcus Strains M P Olmstead, P L DuBois, J B Neal and R Schweitzer New York —p 307
39 *Bacterial Cultures of Human Spleens Removed by Surgical Operation A W Sellards, Boston —p 321

33 **Isolated Organ Lipoids as Antigen in Wassermann Test** —With their method of employing the isolated ox-heart lipoids L'Esperance and Coca have obtained a relatively low percentage (compared with the figures of Ritz and Sachs) of positive reactions in individuals denying syphilitic history, and a relatively high percentage of positive reaction in clinically recognized syphilis Similar differences were observed in the results obtained in parallel tests with the isolated lipoid antigen and the alcoholic extract of guinea-pigs' heart muscle in a series of 706 cases In 650 of the 706 cases the results of the tests were the same with the two "antigens" In the remaining fifty-six cases different results were obtained In twenty cases of thoroughly treated syphilis without symptoms, and of other diseases, no inhibition was obtained at either incubation temperature even with 0 2 c c of the diluted extract of the guinea-pig's heart In six cases of untreated secondary and tertiary syphilis complete fixation was obtained at both incubation temperatures with 0 001 c c of the diluted extract of the guinea-pig's heart In all of these cases a similar result was obtained with the ox-heart lipoids Of twenty-six cases of tuberculosis, malignant tumor was nephritis, all denying syphilitic infection, three cases of tuberculosis reacted positively with as little as 0 02 c c of the diluted extract of the guinea-pig's heart, and nine cases of tuberculosis, one case of malignant tumor and the case of nephritis reacted positively with 0 1 c c All of these cases were negative with the isolated lipoids In one case of chancre, and in one of tertiary ulceration, the reaction was distinctly positive with the isolated lipoids but it was completely negative with even 0 1 c c of the diluted extract of the guinea-pig's heart In another case of primary syphilitic lesion the reaction with the isolated lipoids was strong but with 0 05 c c of the extract of the guinea-pig's heart it was weak

34 **Hyperleukocytosis** —Throughout all of McWilliams' experiments the results point to a leukocytic reaction of nonspecificity Both normal and typhoid immune rabbits respond with a well marked leukocytosis to the intravenous injection of typhoid bacilli but the response is not different in degree in the two instances Typhoid immune rabbits show the same grade of hyperleukocytosis when injected with *B coli* as when injected with *B typhosus* The same is true of rabbits immunized against *B coli* These results were obtained with killed and living vaccine, with an old laboratory strain of typhoid and a freshly isolated one, and with typhoid bacilli grown on plain nutrient agar and on rabbit blood agar Hence no evidence has been observed in favor of the view that typhoid immune rabbits exhibit a specific hyperleukocytosis following the injection of vaccine

38 **Grouping of Meningococcus Strains** —By means of complement fixation the authors claim that the meningococcus may be differentiated from allied organisms A differentiation of individual meningococcus strains is possible by the use of refined technic but the relationship of strains is so close that it is difficult to obtain absolutely clear cut and consistent results Of the twenty-nine strains studied by the authors, fourteen seem to form one group and eight a second group Three seem to be closely related to the first group but have acted so irregularly that they cannot be classed with it, two have shown a relationship with each other only and two have shown a relationship to no other strain

39 **Bacterial Cultures of Human Spleens** —Bacterial cultures were made by Sellards of human spleens removed for surgical purposes in ten cases The cultures from four of these spleens remained sterile In three instances, a micrococcus was obtained and in three other cases an anaerobic bacillus developed The anaerobic bacillus in its morphology, in its cultural characteristics and in its serologic reactions resembled very closely the bacillus isolated by Plotz *in typhus* The evidence which is at present available indicates that these anaerobic bacilli, isolated by Plotz from typhus and appearing also in cases of pernicious anemia, constitute essentially a single species Sellards believes that the weight of evidence indicates that this group of organisms represents parasitic but nonpathogenic flora of the human body There is not sufficient evidence to ascribe a specific etiologic role to members of this group of anaerobic bacilli in either typhus or in pernicious anemia

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62 Case of Abductor Paralysis with Removal of One Vocal Cord C H Baker, Bay City —p 485
63 Poliomyelitis Situation in Detroit G Sewell, Detroit —p 487

64 Service De Sante French Army, or Care of French Wounded L C Donnelly—p 490
65 Case of Hydrocephalus with Spinabifida and Complete Situs Inversus. L L Bottsford, Ann Arbor—p 492
66 *Coley's Mixed Toxins in Four Cases of Osteosarcomas H de B Barss Ann Arbor—p 497
67 Eight Years in Department of Internal Medicine A W Hewlett, Ann Arbor—p 505
68 Case of Lupus Vulgaris U J Wile, Ann Arbor—p 508

66 **Coley's Mixed Toxins in Sarcoma**—Barss urges the use of Coley's mixed toxins One patient with sarcoma of the antrum, patently inoperable who had been given a course of Roentgen-ray treatments without improvement by a man who is acknowledged to be an expert in his line, is now well for over twenty months Another patient with sarcoma of the head of the humerus, also clinically inoperable, is well a year later apparently cured and still possessed of his arm In the third case, the growth of the tumor in the internal condyle of the femur was delayed the health of the patient was greatly improved and the subsequent operation was unusually well borne In the fourth case, sarcoma of tibia, the patient is in good health more than a year later with no evidence of metastases Unfortunately there is now distinct evidence of a local recurrence But the general health of the patient is much improved and if a second operation or it amputation even is indicated later, the chances for a much more favorable and permanent result have been increased

Missouri State Medical Association Journal, St Louis

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71 *Diagnostic Value of Respiration Tracings (Pneumograms) G Richter St Louis—p 486
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76 Fakes and Efficiency in Medical Profession C S Nelson Harrisonville—p 504

70 and 71 Abstracted in THE JOURNAL, June 24, p 2119

75 **Interesting Findings as Regards Clothing Patient Wears when Roentgen Rayed**—Because silk is quite impervious to the Roentgen ray Young urges that we be very careful to ask the patient about his or her clothing before giving an opinion on obscure shadows which are seen in very thin plates He says that 1 mm of silk will filter out as much short or soft rays as 1 mm of aluminum as he showed to be the case by experiments He has come to the conclusion that a glove can be made of silk, which may be heavily impregnated with lead and owing to its weight and thickness one can in a measure feel what he is doing in an abdominal palpation Silks may be graded by the use of the fluoroscope Young has a thousand pieces of silk graded 0, 1 2, 3, according to the amount of resistance they offer to the rays or the density of the shadows cast on a plate with a mild exposure say about one-half X-unit or what would be termed a one-half therapeutic dose to the skin There are many varieties of silks All resist the rays more than ordinary woolen or cotton cloth but the cheaper silks seem to be more impervious to the rays for the simple reason that they are weighted with different metals and consequently the cheaper variety contains more of the metal than the higher qualities

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13 **Ulcerating Granuloma Treated by Injections of Antimony**—Fifty-three and one-half grains of antimonium trataratum in from 1 to 2½ grains doses were injected intravenously by Low and Newham during a period of three and one-half months at four-day intervals As a result of the injections the course and progress of the disease were arrested

15 **Intra-Uterine Scarlet Fever**—During a recent small village outbreak of scarlet fever a case of rather unusual interest was observed by Liddell and Tangye Four of five children developed scarlet fever and were removed to the isolation hospital on May 26 The mother was expecting to be confined at any time, and was therefore warned to keep away from the children as soon as the first suspicion arose as to the nature of their illness Her child was born June 6, and after a thorough washing, which removed all traces of lanugo, was found to be desquamating freely over the whole of the trunk and limbs The desquamation continued for several days, and the urine showed distinct traces of albumin Apart from these two features, the child appeared perfectly healthy and is now quite normal The mother had been rather unwell during the last week or so of her pregnancy, and complained of a 'burning pain inside' She had no sore throat or rash and her temperature was normal She is positive that she had a severe attack of scarlet fever when about 10 years old, and describes the desquamating stage vividly

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25 *Experimental Study of Extirpation and Transplantation of Thymus J M Renton—p 14
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27 Case of Hernia into Paraduodenal Fossa J H Pringle—p 65
28 Disease and Domesticity J Craig—p 73
29 *Cases of Congenital Heart Disease L Findlay and W B M Martin—p 84 To be continued

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30 *Ulceration of Small Intestine with Formation of Indol Derivatives and Indigo Uria D R Adams—p 129
31 *Case of Ectopic Pregnancy which Had Gone Beyond Full Time R Jardine—p 137
32 *Cases of Congenital Heart Disease L Findlay and W B M Martin—p 140

24 **Congenital Heart Disease**—In the case of patent foramen ovale reported by Findlay and Martin the following conditions were found at necropsy hypoplasia of eyes with corneal opacity, coloboma and congenital cataract, ventral hernia, fetal lobulation of spleen and kidneys, patent foramen ovale, catarrhal bronchitis with early pneumococcic bronchopneumonia, much collapse of lung and slight compensatory emphysema, and venous congestion of organs In the case of patent interventricular septum the necropsy disclosed a defect of interventricular septum at pars membranacea, with normal great arterial trunks, closed foramen ovale and obliterated ductus arteriosus Partial collapse of lungs, with terminal very early streptococcal bronchopneumonia

25 **Transplantation of Thymus**—In transplantations of thymus from one guinea-pig to another Renton found healthy thymus tissue up to fifty-three days after transplantation The thymus was rapidly absorbed when transplanted to the peritoneum (abdomen and tunica vaginalis) or under the skin, but grew in the subperitoneal tissue No symptoms were caused by transplantation of the thymus It was impossible to determine if the thymus transplant functionated even when it grew well Total removal of the thymus did not cause apparent symptoms in young guinea-pigs and rabbits

29 **Congenital Heart Disease**—The first case was one of congenital stenosis of pulmonary tract with atresia of orifice—incomplete interventricular septum, patent ductus artriosus and patent foramen ovale Extensive pneumococcic bronchopneumonia—venous congestion of organs Death occurred at the age of 3 months The second case was one of congenital stenosis of pulmonary tract, with defect of intraventricular septum at pars membranacea, widely patent foramen ovale and duplication of vena cava superior Partial atelectasis with emphysema and marked congestion of the lungs Death occurred at the age of 2 months

30 **Ulceration of Small Intestine**—The main points in Adams' case were death was due to peritonitis and perforation of the ileum following on multiple ulceration of the greater part of the small intestine This ulceration process had been going on for at least a week before death The liver activities were to some extent in abeyance The ulcers of the small intestine were associated with marked invasion of the alimentary tissue by an organism similar to the *Bacillus coli* which, as is well known, can produce indol from proteid and its derivatives At one stage complete oxidation of the amino-acids into indigo and skatoxyl pigments took place in the body causing indigo-uria At a later stage this oxidation was less complete, and indican appeared in the urine

31 **Ectopic Pregnancy**—When full time was supposed to have been reached in Jardine's case, labor pains came in with a slight discharge of blood but they ceased on the expulsion of a mass which the attendant pronounced to be a bit of placenta One month later Jardine examined the patient

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11 **Direct Transfusion of Blood**—Cases illustrating the beneficial effect of the direct transfusion of human blood in hemorrhage are cited by Primrose and Ryerson No harm resulted to the donors from the withdrawal of seemingly large quantities (815 1 000 c c) of blood They complained of little or no discomfort, and were able to return to duty after a brief interval

13 **Ulcerating Granuloma Treated by Injections of Antimony**—Fifty-three and one-half grains of antimonium trataratum in from 1 to 2½ grains doses were injected intravenously by Low and Newham during a period of three and one-half months at four-day intervals As a result of the injections the course and progress of the disease were arrested

15 **Intra-Uterine Scarlet Fever**—During a recent small village outbreak of scarlet fever, a case of rather unusual interest was observed by Liddell and Tangye Four of five children developed scarlet fever and were removed to the isolation hospital on May 26 The mother was expecting to be confined at any time, and was therefore warned to keep away from the children as soon as the first suspicion arose as to the nature of their illness Her child was born June 6 and after a thorough washing, which removed all traces of lanugo, was found to be desquamating freely over the whole of the trunk and limbs The desquamation continued for several days, and the urine showed distinct traces of albumin Apart from these two features, the child appeared perfectly healthy and is now quite normal The mother had been rather unwell during the last week or so of her pregnancy and complained of a burning pain inside She had no sore throat or rash and her temperature was normal She is positive that she had a severe attack of scarlet fever when about 10 years old, and describes the desquamating stage vividly

Dublin Journal of Medical Science

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21 Fractures and Fracture Dislocations J S McArdle —p 145
22 Acute Appendicitis with Peritonitis, Their Relation and Treatment J W Long —p 148
23 Diagnosis in Uveitis E Maxwell —p 158

Glasgow Medical Journal

July LXXXVI No 1

24 *Case of Congenital Heart Disease—Patent Foramen Ovale—Patent Interventricular Septum L Findlay and W B M Martin —p 1 To be continued
25 *Experimental Study of Extirpation and Transplantation of Thymus J M Renton —p 14
26 Etiology and Treatment of Gastric Ulcer H Morton —p 23

August No 2

27 Case of Hernia into Paraduodenal Fossa J H Pringle —p 65
28 Disease and Domesticity *J Craig* —p 73
29 *Cases of Congenital Heart Disease L Findlay and W B M Martin —p 84 To be continued

September No 3

30 *Ulceration of Small Intestine with Formation of Indol Derivatives and Indigo Uria D R Adams —p 129
31 *Case of Ectopic Pregnancy which Had Gone Beyond Full Time R Jardine —p 137
32 *Cases of Congenital Heart Disease L Findlay and W B M Martin —p 140

24 **Congenital Heart Disease**—In the case of patent foramen ovale reported by Findlay and Martin the following conditions were found at necropsy hypoplasia of eyes with corneal opacity, coloboma and congenital cataract, ventral hernia, fetal lobulation of spleen and kidneys, patent foramen ovale catarrhal bronchitis with early pneumococcic bronchopneumonia, much collapse of lung and slight compensatory emphysema, and venous congestion of organs In the case of patent interventricular septum the necropsy disclosed a defect of interventricular septum at pars membranacea, with normal great arterial trunks, closed foramen ovale and obliterated ductus arteriosus Partial collapse of lungs, with terminal very early streptococcal bronchopneumonia

25 **Transplantation of Thymus**—In transplantations of thymus from one guinea-pig to another Renton found healthy thymus tissue up to fifty-three days after transplantation The thymus was rapidly absorbed when transplanted to the peritoneum (abdomen and tunica vaginalis) or under the *skin, but grew in the subperitoneal tissue No symptoms* were caused by transplantation of the thymus It was impossible to determine if the thymus transplant functionated even when it grew well Total removal of the thymus did not cause apparent symptoms in young guinea-pigs and rabbits

29 **Congenital Heart Disease**—The first case was one of congenital stenosis of pulmonary tract with atresia of orifice—incomplete interventricular septum, patent ductus artriosus and patent foramen ovale Extensive pneumococcic bronchopneumonia—venous congestion of organs Death occurred at the age of 3 months The second case was one of congenital stenosis of pulmonary tract, with defect of intraventricular septum at pars membranacea, widely patent foramen ovale and duplication of vena cava superior Partial atelectasis with emphysema and marked congestion of the lungs Death occurred at the age of 2 months

30 **Ulceration of Small Intestine**—The main points in Adams' case were death was due to peritonitis and perforation of the ileum following on multiple ulceration of the greater part of the small intestine This ulceration process had been going on for at least a week before death The liver activities were to some extent in abeyance The ulcers of the small intestine were associated with marked invasion of the alimentary tissue by an organism similar to the *Bacillus coli* which, as is well known, can produce indol from proteid and its derivatives At one stage complete oxidation of the amino-acids into indigo and skatoxyl pigments took place in the body, causing indigo-uria At a later stage this oxidation was less complete, and indican appeared in the urine

31 **Ectopic Pregnancy**—When full time was supposed to have been reached in Jardine s case, labor pains came in with a slight discharge of blood but they ceased on the expulsion of a mass which the attendant pronounced to be a bit of placenta One month later Jardine examined the patient

under an anesthetic The top of the tumor was close up to the diaphragm The fetal parts could be palpated, the head being felt high up There were no fetal heart sounds and no movements, although the patient had stated that she felt movements on the day of admission The nonpregnant uterus was pushed to the left side It was enlarged, and the cervical canal would admit a finger The cavity was empty, but through the right side pressing it inward a mass could be felt which was evidently the breech of the fetus The diagnosis was an extra-uterine gestation which had gone beyond full time, and the fetus was dead Jardine made a central incision fairly high up and cut through the outer layer of the sac, but not through the amnion The sac was everywhere adherent to the parietal peritoneum and the bowels The child was turned out of the abdomen, and as it came out the amnion ruptured, and some turbid liquor amnii escaped on to the table The placenta, which was in the lower part of the abdomen, was easily lifted out It looked like a flattened out mass of gingerbread There was no bleeding from the site Recovery was uninterrupted The child had apparently reached full time It was beginning to macerate, so it probably had perished about the time of the spurious labor

32 **Congenital Heart Disease**—In this case the necropsy disclosed congenital syphilis, patent foramen ovale and patent ductus arteriosus and venous congestion of organs The child was 1 month old at the time of death

Journal of Laryngology, Rhinology and Otology, London

September XXXI No 9

33 Centrally Caused Bilateral Laryngeal Abductor Paralysis in Tabes Report of Postmortem Examination E D D Davis—p 361
34 Epidemic Nasal Sinus Disease J J Kyle—p 367
35 War Deafness from Lesion of Internal Ear Got—p 374
36 Two Cases of Referred Sensation (Arnold s Branch of Vagus Nerve) T A MacGibbon—p 380

Lancet, London

September 16 II No 4855

37 How Septic War Wounds Should Be Treated A E Wright—p 503
38 *Differential Leukocyte Counts in Enteric and Dysenteric Convalescents I W Hall and D C Adam—p 514
39 Vaccination of Guinea Pigs with Bacillus Perfringens M Robertson—p 516
40 Infective Jaundice (Spirochaetosis Icterohemorrhagica) N B Gwyn and J J Ower—p 518
41 *Pneumococcal Meningitis with Recovery Following Vaccine Therapy A C Brown—p 519
42 Crossed Hip Reflex in Enteric Fever E B Gunson—p 520
43 Case of Threadworms in Appendix Simulating Acute Appendicitis S G Papadopoulos—p 521
44 Case of Ruptured Ileum and Bladder Operation Recovery C P G Wakeley—p 521
45 Ground Level Latrine F E Fremantle—p 530

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46 *Cerebral Embolism Consequent on Gunshot Injury to Carotid Arteries G H Makins—p 543
47 *Agglutination Reactions with Oxford Standard Agglutinable Cultures R Donaldson and B Clark—p 546
48 Application of Drop Measuring to Widal Technic E W A Walker—p 552
49 New Remedy for Syphilis Luargol or 102 N S Bonard—p 554
50 Use of Perforated Celluloid in Dressing of Certain Wounds S R Douglas—p 558
51 Case of Foreign Body in Rectum J F Peart—p 558
52 *Ligature of Right Internal Iliac Artery for Secondary Hemorrhage from Buttock R L Scott and A R McLachlan—p 559

38 **Leukocyte Counts in Enteric and Dysenteric Convalescents**—The blood films from convalescent cases of amebic and bacillary dysentery, typhoid and paratyphoid were examined by Hall and Adam The figures yielded by seventy-one successive cases of men whose blood contained typhoid agglutinin only, and who had not manifested any enteric symptoms, were within normal limits In the paratyphoid A convalescents the counts from men who had returned from the Mediterranean area were different from those received from French sources The former show a larger percentage of polynuclears and a smaller lymphocyte content In paratyphoid B there was hardly any difference In posttyphoid conditions, however there was persistence of low polynuclear and high mononuclear content, long after the pyrexia and acute conditions had subsided This feature stands out in strong contrast with the differential count of the typhoid inoculated men The content of agglutinin in antityphoid inoculated men does not appear to influence appreciably the polynuclear or the lymphocyte proportions Neither does it affect the differential percentages in the paratyphoid A and B convalescents, although in those from the adjacent war zone there is the suggestion of a tendency toward the normal status of the polynuclears and mononuclears in the paratyphoid A cases The mixed infection of entameba histolytica and paratyphoid B fever appears to be associated with a decreased eosinophilia and a comparatively normal cell count otherwise In jaundice and frost bite, in which evidence of protozoa or paratyphoidal bacilli was not forthcoming there is a distinct polynuclear leukocytosis In heavy lamblia infections eosinophilia is not a definite feature, and the cell counts are within average limits After the sixth week the counts made on the typhoid films show that the relative mononuclear increase and the polynuclear decrease persist for a considerable period, the same applies to the cases of paratyphoid A from the near war area The paratyphoid cases from the distant war zone exhibit what are practically normal figures

41 **Pneumococcal Meningitis**—The symptoms in the case reported by Brown were those of cerebrospinal meningitis Lumbar puncture was performed and a rather thick, opaque fluid was withdrawn with difficulty The pressure was not increased He was then given, into the abdominal wall, an injection of antimeningococcal serum and the fluid was sent for bacteriologic examination Until the bacteriologic report was available treatment was symptomatic and consisted largely of frequent doses of hyoscin When it was known that the cerebrospinal fluid contained not meningococci but pneumococci, vaccine therapy was commenced Lumbar puncture was again carried out and once more seemed to cause some lessening of extreme restlessness The reaction to the first dose of vaccine was marked He became less rigid and more sensible and his headache was less There was a fall of temperature after each injection At first the fall was temporary, but after the third injection he seemed, although still very ill, to be definitely on the mend and only two other injections were given He made a complete recovery

46 **Embolism and Gunshot Injury to Carotid Arteries**—The group of fourteen cases cited by Makins consists of a series of injuries to the great vessels of the neck They illustrate the whole subject and offer special interest from the fact that embolic obstruction of even minor cerebral vessels may produce more serious effects and is more readily recognized than the blocking of vessels supplying small areas of the limb where arterial anastomosis is freer and where degeneration of the tissues concerned is less important in its effects The presence of a definite perforating wound of the artery has been assumed from the existence of obvious signs Thus a systolic arterial bruit, an arteriovenous murmur and purring thrill, the detection of a pulsating swelling in the course of the vessel or the occurrence of secondary hemorrhage demanding surgical intervention In one instance also the locality of the injury and the probability of an obliterated opening was indicated by a small circumscribed induration in the course of the vessel A nonpenetrating injury has been assumed when none of the above signs could be detected while diminution or abolition of the carotid or superficial temporal pulses has been regarded as evidence of obstruction or complete obliteration of the arterial lumen

47 **Agglutination Reactions**—This paper is based on the serum reactions of 275 patients, of whom 184 were soldiers The tests were carried out on the principle recommended by Dreyer and his colleagues Donaldson and Clark used a volumetric method, delivering the fluids from accurately graduated pipets The great majority of the cases arrived with a diagnosis of 'enteric," whereas out of 115 cases only 13 per cent at the outside could be claimed as true typhoid The mortality among these typhoid cases was nil, and offers a marked contrast to the 15 per cent mortality among 53 uninoculated civilians Out of the 115 cases examined twice, 71 6 per cent contained agglutinins for paratyphoid bacilli,

and out of the whole number of military cases 111, or 60 3 per cent agglutinated paratyphoid organisms Paratyphoid infections raise the T (typhoid) titer in inoculated persons The authors emphasize the need for repeated agglutinations at intervals in the case at least of persons previously inoculated They do not think that any diagnostic inference can be drawn from a consideration of the titer in inoculated persons, in cases in which only one examination has been made as individuals vary so diversely in their agglutinin response to infection or inoculation The authors have found no evidence to support the view advanced by Tidy that marked pyrexia for some days is associated with diminution or disappearance of T inoculation agglutinins None of 38 uninoculated controls showed any trace of agglutinins for T, A or B except 4 In one of these there was a definite history of contact and in another a strong probability Two only could not be accounted for

52 **Ligature of Right Internal Iliac Artery for Secondary Hemorrhage from Buttock**—This patient was suffering from a large shrapnel wound of the right buttock considerable bleeding had occurred, which had been treated with gauze plug and pressure An operation was performed with the intention of securing the bleeding point The track was explored, clots were removed, but no definite bleeding vessel was discovered merely venous ooze, which stopped after the track was thoroughly washed out Later a slight hemorrhage occurred, and the same day a second severe hemorrhage took place and his condition became serious A further operation was decided on and the question arose as to the advisability of ligating the internal iliac The abdomen was opened The right sacro-iliac synchondrosis was then defined and the ureter and common iliac vessels localized The posterior layer of the peritoneum was then picked up with forceps, incised, and with blunt dissection the internal iliac artery was defined and the vessel ligated in continuity The slit in the peritoneum was sewn up and the abdomen was closed The patient made an uninterrupted recovery, with no further hemorrhage

Medical Journal of Australia, Sydney

August 26, II No 9

53 Cardinal Ligaments Their Genesis A J Nyulasy —p 151
54 Surgical Experience in Great Britain R Bowman —p 153
55 Farm Colony for Consumptives A A Brown —p 155
56 Treatment of Coccal Infections by Creosote J F Merrillees —p 157
57 Depressed Fracture of Skull, with Localizing Signs D I Smith —p 158
58 Case of Pancreatic Suppuration Simulating True Diabetes D I Smith —p 158

Journal de Chirurgie, Paris

XIII No 5 pp 441 644

59 *Fixation of Spine in Good Position by Hibbs Method in Vertebral Tuberculosis Three Cases (Le traitement du mal de Pott par la methode de Hibbs) M Guillot and G Dehelly —p 441
60 *Lumbar Puncture after Wounds of the Skull (Valeur de la ponction lombaire dans les plaies du crane par projectiles de guerre) R Leriche —p 451

59 **Hibbs' Operation for Pott's Disease of the Spine**—Guillot and Dehelly have operated by R A Hibbs' method in three cases and state that in all a solid fixation of the spine in a good position was realized and during the twelve and thirteen months to date there has been no indication of new curvature The children were between 4 and 15 The operation ensures fixation but does not correct preexisting curvature nor cure the disease except by providing better conditions for spontaneous cure They give six illustrations showing the various procedures which comprise the operation and they expatiate on the advantage of the child s being up and about in a few weeks, instead of being imprisoned for long months in plaster A cold abscess accessible from the abdominal wall calls formally for operative treatment of this kind The only contraindications they recognize are concomitant tuberculous lesions in the lungs or elsewhere or a posterior cold vertebral abscess or one with a fistula

60 **Lumbar Puncture After Wounds of the Skull in War**—Leriche analyzes here the lumbar puncture findings in 121 cases of wounds of the skull comparing them with the clinical course His conclusion is that lumbar puncture is of little if any value for the diagnosis and prognosis, but as a therapeutic measure it renders immense service in cases of injury of the skull by a projectile After trephining, lumbar puncture aids by reducing excessive pressure, thus providing better conditions for recuperation He repeats it every two or three days when there are extensive lesions and all is going well If not he punctures oftener He has often done lumbar puncture to relieve intense headache of men on their way to a home hospital after an operation near the front It always relieved the men One of his own patients had lumbar puncture done twelve times in one month before recovery There was no retention of urine except for the first afternoon He warns that lumbar puncture is beneficial in these cases only when the pressure is above normal When it is low withdrawal of even a small amount of fluid is liable to bring on headache He warns further that in case of hernia of the brain lumbar puncture may cause the hernia to subside spontaneously and this be followed by a slight infectious process

Journal de Médecine de Bordeaux

September LXXXVII No 11 pp 211-228

61 Value and Technic of Artificial Pneumothorax E Leuret —p 211
62 *Iodin Internally after Injury from Gases (L'iode et les gaz asphyxiants) L Boudreau —p 214
63 Alcohol of Not Much Use for Sterilization of the Hands (L alcool employe au lavage des mains en chirurgie) L Barthe —p 218
64 Case of Inherited Cerebellar Ataxia Richaud —p 219

62 **Iodin Internally in Treatment of Injury from Asphyxiating Gases**—Boudreau s endorsement of iodin internally as a potent means to hasten restoration of living tissues has already been mentioned in these columns, March 4, 1916 p 775 It has been found particularly useful in pulmonary tuberculosis to promote rapid repair, and he here announces with special stress that injury from the asphyxiating gases calls for iodin internally He gives the iodin in the form of the tincture (The French tincture is the one meant One part of iodin dissolved in 12 parts 90 per cent alcohol) A drop or two of the tincture is added to each glass of water, milk tea or other beverage taken during the day, so that from five to seven doses are thus taken The dose is increased by 1 drop each day until some of his patients reached 300, 400 or even 600 drops a day, and kept this up a long time 'The disease does not sleep or rest and the treatment should be correspondingly continuous ' The lungs suffer from intoxication with gases industrial or military, and this intensive iodin treatment is a potent aid in the recuperation of the lung tissue

Paris Médical

September 9 VI No 37 pp 225 240

65 Filiform Drainage in Prevention and Treatment of Suppuration Around Purulent Focus in the Knee (Les abces periarticulaires compliquant les arthrites purulentes du genou) H Chaput —p 225
66 *Causes of Sudden Death after Removal of Tracheotomy Cannula (Mort subite d un soldat atteint d'une blessure au larynx apres enlevement d une canule a tracheotomie) M Courtois Suffit and R Giroux —p 227
67 *Local Anesthesia for Operations on the Skull (L anesthesie locale en chirurgie d ambulance particulierement en chirurgie cranienne) J Quenu —p 229
68 Electric Device to Detect Deception in Respect to Nocturnal Incontinence of Urine Uteau and E Richardot —p 233
69 *Condensed Milk in Rice Water in Treatment of Diarrhea (Nouveau traitement des diarrhees par le lait condense dilue dans de l eau de riz) P Lassabliere —p 235

September 16 No 38 pp 241 256

70 *Biologic Study of Gangrenous Wounds Treated by the Carrel Dakin Method Two Cases N Fiessinger and P Moiroud —p 242
71 Uselessness and Dangers of Early Tube Drainage for War Wounds P Bertein —p 248
72 Extraction of Projectiles by Modern Technic Phocas —p 251
73 *Fracture of the Body of the Second Cervical Vertebra (Fracture de l apophyse odontoide et du corps de l axis) G Rechou and H Bichat —p 253

66 **Sudden Death After Removal of Tracheotomy Cannula**—The necropsy described showed that the irritation from the cannula had caused proliferation of tissue to form a polyp-like excrescence from exuberant granulations This dropped down into the trachea, obstructing it completely after the

cannula had been removed Moure and others have noticed proliferation of the laryngeal mucosa in these circumstances, and the possibility of suffocation from this cause after detubation should be borne in mind It may explain many cases attributed to nervous inhibition

67 **Local Anesthesia in Treatment of War Wounds**—Quenu refers in particular to multiple wounds, citing a number of typical cases of shell wounds at various points By using local anesthesia for some, spinal anesthesia for others, with possibly a few whiffs of some general anesthetic, it was possible to give operative treatment to all the wounds without depressing the patient's vitality too much General anesthesia alone would be too prolonged for safety with wounds at many different points

69 **Condensed Milk in Rice Water in Treatment of Diarrhea**—Practically this same article has already been summarized as it appeared elsewhere One part of condensed milk in four parts of rice water is the formula, and with 1 or 2 quarts of this a day Lassabliere has obtained most excellent results in 256 cases of acute enteritis and also in three cases of confirmed bacillary dysentery No medication was given in seventy-two of the cases, the men getting nothing but the condensed milk in rice water although they were having from six to thirty stools a day, with colics and sometimes pronounced tenesmus On the milk-rice water they recovered completely in five days on an average In a similar series of thirty-two cases treated with the usual other measures recovery was not reached under twenty-six days

70 **Biologic Study of Gangrenous Wounds Given Continuous Treatment with Hypochlorite Solution**—Fiessinger and Moiroud state that the extensive and deep shell wounds of the forearm were gangrenous, both aerobic and anaerobic germs being found in them The infection was localized, there being no closed cavity, and under the influence of the continuous moistening with the sterilizing fluid the mortified tissues lining the wound melted off, as it were, no eschar forming By the sixth or seventh day the red granulating surface was exposed repair proceeding vigorously This rapid detergent action was the most striking feature of the treatment, the gangrenous wound showing active repair by the eighth day at longest It removes the conditions which favor proliferation and spread of bacteria and the process remains strictly localized while the hypochlorite after dissociating the proteic medium reaches the microbe and has a sterilizing action on it But the main importance of the Dakin fluid kept in constant contact with the wounded tissues is its chemical detergent action melting the devitalized tissues and thus facilitating their exodus They add that a 5 per cent solution of sodium chlorid checks the dissolving action of hypochlorites and is used in tanneries for this purpose Applied around the wound it prevents caustic action from the hypochlorites, without the macerating influence of petrolatum

73 **Fracture of the Axis**—In the case reported only the odontoid process was fractured while the whole vertebra was slightly dislocated The fracture occurred from a fall down stairs and entailed hemianesthesia but there were no motor disturbances Treatment was by extension in plaster, the outcome of the case is not known

Presse Médicale, Paris

September 14 XXIV No 51 pp 405 412

74 *Subperiosteal Removal of Splinters of Bone after Fractures (L esquillectomie sous perioste large primitive) R Leriche—p 405
75 Dysentery and Dysenteriform Diarrhea L Giroux—p 408

74 **Subperiosteal Removal of Sequesters After Fractures**—Leriche gives twenty-two illustrations of war fractures and the preferable technic for treating them For twenty-three months he has made a practice of removing sequesters while leaving the periosteum In some cases he had to perform a secondary operation as sequesters, in the vitality of which he had trusted, were finally cast out A more complete primary operation would have saved this In three cases there was exuberant callus, the periosteum having become infected If the focus of the fracture had been opened up more freely, this might have been avoided In all the other cases the fracture healed simply and completely, and in his 230 cases there never was a pseudarthrosis from loss of the sequesters In short, he declares, sequestrectomy when surgically indicated is physiologically permissible If done subperiosteal, it can be extensive and thorough, the intact periosteum promptly undertaking the work of repair The aim should be to ensure an aseptic immediate and definite course of the healing at the focus of a fracture by a projectile This provides conditions for aseptic repair of the solution of continuity, which is of primordial interest for the future of the wounded

The dread of pseudarthrosis should be supplanted by the just fear of subacute and chronic osteitis The latter is what renders so grave the outlook for fractures given inadequate operative treatment, all of which can be easily avoided by prompt and thorough sequestrectomy, removing all scraps that may ever need to be cast off, not only the free sequesters but those discovered after removal of the adherent sequesters masking the intramedullary focus of contusion A well opened up wound continues to suppurate only when there is something still left there to be eliminated The sacred dogma of always leaving adherent sequesters in place has been overthrown by the experiences of the war But the periosteum must all be preserved It must be gently and patiently detached from the bone, any haste is liable to leave the osteogenic layer clinging to the bone, while this is the essential tissue that ensures repair Twenty-two illustrations show the sequence of the processes of repair and the fine functional outcome Gaps of 5, 6 or 7 cm fill up with new bone and stumps are solidly bridged

Correspondenz-Blatt für Schweizer Aerzte, Basel

September 9, XLVI No 37, pp 1153 1184

76 Simple and Rapid Method for Estimating the Hardness of Roentgen Tubes (Ueber eine einfache und rasche Bestimmung der Rohrenharte bei Rontgenaufnahmen) G Perlet—p 1153
77 *Dietetic Treatment of Deficient Gastric Secretion (Die Achylia und Hypocholia gastrica incl den achylischen Darmdyspepsien und ihre diatetische Therapie) A Fischer—p 1157 Commenced in No 36, p 1121
78 Health Insurance of the Soldiers in Switzerland (Militar Versicherung und Tuberkulose) F Gehrig—p 1166 (Erwiderung) R Staehelin—p 1169

77 **Dietetic Treatment of Gastric Achylia and Resulting Intestinal Disturbance**—Fischer is chief of a Swiss sanatorium and in this long article he emphasizes the importance of dietetic treatment of secretory insufficiency of the stomach To make up the deficit in hydrochloric acid and pepsin is by no means all that is required We should aim to influence and restore to normal the fine functional interplay of the digestive organs, as the manifold manifestations resulting from achylia include not only metabolic disturbances but also nervous symptoms impairing the general health He reviews the history of achylia, saying that there is evidence to prove that it may occur from functional disturbance alone, especially in young persons with a neuropathic or other constitutional predisposition One of his patients with achylia at 25 and during the ten years since to date, has never menstruated since puberty Most of those who present gastric achylia are of low-powered constitution The physical inferiority may be congenital or the result of debilitating illness Depressing nervous influences or abnormal composition of the blood may be responsible Treatment should aim to supply ample nourishment while sparing the stomach or leaving it at rest as much as possible Otherwise, food not getting digested irritates the stomach, and this sets up a vicious circle, a chronic gastritis developing from what was purely functional achylia at first The symptoms of achylia may be insidious or may simulate hyperchlorhydria disturbances or achylia diarrhea may be the first warning symptom The bowel troubles with gastric achylia need not entail diarrhea There may be severe constipation or this may alternate with diarrhea

The intestinal digestion of fat, of albumin or of carbohydrates may be defective but as a rule all three suffer, and the bowels must be spared as much as possible Buttermilk, whey, kefir, and milk sugar render good services here when individualized as also massage, hydrotherapy, oil enemas, etc The meals should be smaller and more frequent, whether the motor functioning is exaggerated or insufficient Milk may cause digestive disturbance with achylia, for reasons which he enumerates Buttermilk, yoghurt and whey are borne better As Pawlow has shown that lactic acid, butyric, acetic and citric acid all stimulate secretion of pancreatic juice, the use of milk in these forms is logical The teeth should be put in order and hygiene of the table enforced with scrupulously complete mastication The diet should aim to keep up the strength while sparing the heart and kidneys to the utmost When the achylia is due to constitutional physical inferiority, special care must be taken not to overtax the inferior organs in giving tonics, etc Even when achylia results from a physical defect beyond our power to correct, yet we can adapt our measures to this and strive to compensate for the lacking secretion by calling on the intestinal functions and giving the food in small and frequent meals, mostly in fluid form or soft mashed, with very little if any meat, and this, tender or chopped fine Tapioca rice and meringues may be used to give variety For beverages he allows only tea when the motor functioning is insufficient, and orange flower tea when it is normal, linden flower tea when there is gastrogenous diarrhea, and yoghurt when there is constipation These beverages are allowed only once a day, at afternoon tea, according to a series of daily menus given

Gazzetta degli Ospedali e delle Cliniche, Milan

September 7 XXXVII No 72 pp 1121 1136

79 *Puzzling Cases of Pleurisy (Considerazioni su alcune cause di dubbi diagnostici nella pleurite degli adulti e dei bambini) A Sofia —p 1127

79 **Differentiation of Pleurisy**—Sofia comments on the puzzling syndrome liable to be presented by inflammation of the pleura in the heart region The palpitations, dyspnea and precordial pain spreading down the left arm suggest heart or coronary trouble, when in reality there is merely precordial pleuritis without effusion He has encountered a number of such cases and others in which inflammation in the pleura of the posterior mediastinum simulated a new growth or glandular trouble or ectasia of the aorta Another cause of error may be when an encysted interlobar pleuritis perforates into a bronchus The diagnosis of galloping consumption is almost certain to be made if the disturbances keep up for any length of time The pleuritis may irritate the phrenic nerve and cause pain localized at a distance Gerhardt has reported four cases of pain in one shoulder for which pneumonia of the lower lobe, chronic pleurisy without effusion, or pleurisy following an infarct in the lower lobe was responsible The phrenic nerve was sensitive to pressure in all the four cases The pain was most severe at the outer rear aspect of the shoulder joint, in two of the cases rheumatic arthritis had been erroneously diagnosed

Sofia calls attention in particular to the pleuritis accompanying hydrothorax in heart disease and pleuritis of the diaphragm With the latter affection, the downward displacement is a differential sign, but when the pleuritis is restricted to the left side there are no objective symptoms although the functional disturbances are pronounced There is persistence of the vesicular murmur down to the base of the thorax and complete absence of dulness and exploring the phrenic nerve along its course may suggest the true cause of the disturbances The pleura may be affected on both sides when only one side is causing symptoms Bilateral trouble is rendered manifest by Remond s sign on both sides This is the apparently paralyzed condition of the lumbar muscles where they stand out in relief along the side of the spinous processes, from the twelfth rib to the crest of the ileum With unilateral pleurisy this lumbar muscular mass seems stretched and does not alter when the trunk is bent over The ileocostal muscle is contracted and there is no groove as normally between the muscles He discusses further the differentiation of tuberculous pleurisy from the nontuberculous, and reports the case of a child of 5 taken very sick presenting vocal tactile fremitus even more pronounced than normal with an area of dulness at the back in the lower left half of the thorax, and bronchial respiration in this area, fever, vomiting and continuous coughing, all coming on in twenty-four hours Pneumonia was the presumptive diagnosis at first, but the discovery of the Grocco triangular dulness on the opposite side, and the reduced width and augmented resistance in the intercostal spaces on the affected side, soon revealed that the pleura was the seat of the trouble The intercostal muscles contract when the pleura is inflamed and this narrows the interspaces The prompt recovery after exploratory puncture and withdrawal of a few c c of a fibrinous serous fluid confirmed the diagnosis of pleurisy

Policlinico, Rome

September 10 XXIII No 37 pp 1095 1118

80 *Why a Patient with Acute Ataxia is Able to Swim (Ancora sulla questione perche un ammalato di atassia acuta abbia potuto nuotare benissimo) A Marina —p 1095

80 **Swimming Possible with Ataxia**—In Marina's case, and also in Luciani s dogs, after removal of the cerebellum complete ataxia rendered walking difficult if not impossible, but swimming was done without effort Marina's patient was a boy of 13 left with aphasia chorea and other nervous disturbances after typhoid By the end of three months there was some improvement but the ataxia had grown more pronounced and affected the entire body No signs of a cerebellar lesion could be detected The boy's father had a sea-bathing establishment, and when the boy was placed in the water he swam perfectly This case has aroused much discussion in Italy, various explanations being advanced

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81 Three Alleged New Species of Flukes (Trematodeos novos) L Travassos —p 257

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82 Organization and Management of the System of Hospitals and Dispensaries at Rio (Assistencia publica no Rio de Janeiro) L Barbosa —p 265 Commenced in No 30 p 233

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92 Maternal Impressions Telegony etc , from Scientific Standpoint (Zagadochniya formi nasliedstvennosti) A T Brandt —p 721 Commenced in No 30 p 697
93 *Changes in the Leukocytes under the Influence of Repeated Injections of Antityphoid Vaccine V I Glinchikoff —p 726 Commenced in No 30 p 703
94 First Aid after Poisoning with Asphyxiating Gases (O proiskhozhdenii oteka legkikh pri otravlenii udushlivimi gazami) T A Andreeff —p 732
95 Iodin in Internal Treatment M A Germovich —p 741

93 **The Changes in the Blood Picture After Repeated Injections of Antityphoid Vaccine**—No knowledge of Russian is required to understand at a glance the fifteen comprehensive tables reproducing the rows of figures representing the various elements of the blood picture as examined from day to day and even from hour to hour on certain days during a thorough course of vaccination against typhoid The curves show unmistakably that the human organism responds

to every injection of the vaccine with, at first, a reduction in the total leukocyte figure and then a rise which thereafter gradually subsides This reaction occurs the same whether given amounts of killed typhoid cultures are injected or the living filtrates of the cultures after the bacteria have been strained out This reaction is the same, further, that is observed after injection of living cultures of staphylococci, diplococci, etc The wave of leukocytosis is most pronounced after the first injection, it reaches its highest point in about four hours on an average, the increase being proportionally largest in the lymphocytes and neutrophils Glinchikoff queries whether there is any relation or parallelism between these blood changes and the general reactive phenomena In some of the cases a parallelism between the clinical manifestations and the blood findings was evident, but in others not

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96 *Medical Education V (Voortzetting van het praeclinisch onderwijs in de clinische jaren clinische physiologie) G van Rijnberk —p 903

97 *Importance of Castration in Treatment of Myoma of the Uterus (De waarde der castratie bij myomen der baarmoeder) M A Mendes de Leon —p *906*

98 The So Called Intracorpuscular Conjugation of the Malaria Parasite (Over de zoogen Intraglobulaire conjugatie' van den tropicaparasiet Laverania malariae) N H Swellengrebel —p 914

99 Success of Emetin in Treatment of Abscess of the Liver Two Cases G J van Thienen —p *930*

100 Rubeola (Roode hond) M W Scheltema —p 924

96 **Continuance of Preclinical Instruction Into the Clinical Years**—Van Rijnberk here summarizes and reviews Lee's article on this subject in The Journal, Feb 26, 1916, p 639, continuing his discussion of the readjustment needed in medical education (The four previous instalments have been reviewed here week by week) He quotes with approval Lee's remark that the average physician does not know enough physiology and does not have enough of the habit of regarding his patients from the standpoint of physiology, adding, "This may be true of American physicians in particular but it certainly applies to some extent to the physicians in every land The physician, Lee says, is much more inclined to think anatomically than physiologically When he is thinking of an organ, it is its structure, more than its special performance, that springs up in his mind But what the organ accomplishes is the main thing, medical problems are principally dynamic, not static They require knowledge of what the organ tissue or body can accomplish so long as it is healthy As the physician does not regard things from the physiologic point of view as much as he should, Lee protests against the too exclusive teaching of anatomy, and insists that the teaching of physiology should be continued into the clinical years of the medical course

"Lee s proposal to continue the teaching of physiology into the clinical years, I regard as extremely important and practical Whether it is practicable, however, is another question, at least in the Netherlands But it can do only good to discuss the question There are three main reasons that may be advanced in favor of this continuation of the teaching of physiology into the clinical years One reason is that, however much the clinical professors themselves may be impressed with the preeminent importance of the physiologic mode of thought in obtaining a grasp of a morbid syndrome, and however much they may strive to impress this on their hearers, yet the students are attracted so much more by the manifold new things they are learning in regard to diagnosis, therapeutics etc, that physiology is crowded out A special course which, as clinical physiology, would keep before their minds the physiologic mode of thought would certainly be of great value The second reason is that for many facts in pure physiology the conception cannot be complete unless the abstract is supplemented by a concrete example—the conception of ataxia, for instance An atactic animal does not arouse the same keen and lasting conception of the condition as the sight of a human being with locomotor ataxia Whole series of researches, demonstrations and tests in the field of physiology would be far more instructive and fruitful than is now the case, if they could be applied and practiced in the clinical years

"My third reason is that physiology as taught in the preclinical years is mainly the physiology of laboratory animals Only a few simple tests are made on man, the blood count and hemoglobin test and estimation of the blood pressure The reason for this is self-evident Before a test can be applied on a living human subject we must first catch the living subject, and, out of all creation the one creature that is the hardest to secure for a physiologic laboratory is a human being The students can apply to each other in the class room only a few simple procedures that do not take much time nor require exposure of the body Persons who make a business of submitting to tests are hard to get, exacting and troublesome, and hence tests which would prove so much more enlightening when done on man are done merely on cats and rabbits A course of clinical physiology held in a hospital, where some of the inmates, to pass away the time or for a slight remuneration, would gladly submit to simple tests that do not cause pain, would be a magnificent supplement to the animal physiology that has been taught

However odd Lee's words may seem at first, they yet contain valuable seed Some lecturer, specially trained in physiology and with some practical clinical experience, connected with the clinic for internal diseases could hold a course in clinical physiology This would have the special advantage that physiology would be more intensively studied—two years is but a short time to glean over this vast field and a little further training in biologic and clinical physiology would be of great benefit to the future physician"

97 **Castration for Myoma of the Uterus**—De Leon relates that he has applied castration in treatment of the myomatous uterus in 114 among his 800 patients in this category since 1892 He always examined microscopically scrapings from the uterus when there was the least suggestion of possible cancer, and he excluded from this method of treatment all cases in which the myomas extended to the umbilicus These very large myomas seldom retrogress completely, and the disturbances are more from compression than from hemorrhage Three of the women succumbed to the by-effects of the operation, acute peritonitis or pulmonary embolism In the latter case the very large myoma extended beyond the umbilicus and its torsion had interfered with the circulation In future he would do hysterectomy in such a case Omitting cases before 1905, the mortality thus has been 1 58 per cent In six cases he found it impossible to remove the ovaries when the abdomen was opened, but the results of the castration were entirely satisfactory in 96 of 104 The outcome in eight cases is not known, but as the patients have not returned for further treatment it may be assumed that conditions are satisfactory in them also In a few cases there were slight and transient hemorrhages from the uterus and a small number continued to menstruate irregularly for a few months The uterus atrophied in from six to eighteen months small myomas retrogressed more rapidly in proportion than large ones There were no serious deficit phenomena in any case, almost all the women being at or near the menopause age Only a few had headache, congestion and hot flashes, and these soon subsided under sedatives or a little ovarian extract His experience further confirms Lawson Tait's statement in regard to removal of the ovaries that these organs have as little to do with a woman's sexual appetite as her front teeth have De Leon never thinks of applying castration in small myomas or those causing no disturbances He restricts the measure to cases in which either the uterus or the ovaries have to be removed, preferring the latter to myomotomy and to roentgenotherapy It has the advantage over the latter in being more certain and requiring less time and expense Only when some organic defect contraindicates castration, he resorts to Roentgen treatment

Ugeskrift for Læger, Copenhagen

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101 Papillomatous Growths in the Larynx Cancerous and Noncancerous (*Papilloma malignum laryngis*) *E Schmiegelow* —p 1489

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THE INFECTIOUS DISEASES AS A FIELD OF INVESTIGATION IN PATHOLOGY *

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When we consider that the science of pathology is seventy years old and that its object and scope were stated in its inception as fully and accurately as the most modern of us today could desire, it seems strange that a restatement of its essential purpose should be periodically required. There is at least one assertion that all of us concerned directly or indirectly with the study of disease are prepared to admit, pathology as a separate science was born with Virchow, and its birth was signalized by the publication in 1847 of the famous *Archives* of Virchow and Reinhardt.

The significance of the title of this publication has not perhaps always been appreciated. "The archives for pathologic anatomy and physiology and for clinical medicine," it runs. Virchow's introductory article in the first number, "Ueber die Standpunkte in der wissenschaftlichen Medizin," is today as pertinent and as explanatory of the purpose of our science as when it was written. Its reperusal is particularly to be recommended to those who think that in clinging to the purely morphologic type of pathology they are carrying out the ideals of our illustrious predecessor.

Virchow's conception of the scope and possibilities of pathology was far broader than present-day standpatters would have us believe. His vision was far from restricted to the microscopic field that encircles some obvious structural change that may or may not bring to our minds some conception of the functional disorder that has preceded. Virchow's editorial introduction, to which I have referred, is notable in several particulars. In the first place it states clearly the duty and privilege of pathology in respect to clinical medicine, namely, that it serves as an intermediary between the more fundamental sciences and practice. These fundamental sciences are justifiably self-sufficient and introspective, they determine certain utilizable facts, but bear no direct message to the practitioner. It remains for pathology to apply these facts toward the understanding, the diagnosis and the treatment of disease. It is interesting to find that Virchow lays principal emphasis on the development of pathologic physiology as the greatest aid to the healing art, in no uncertain terms he states that the prime object of pathology is the study of disordered function.

You may ask how we can reconcile this creed with the master's own performance, with his own personification as a father of cellular pathology. There is nothing simpler. Virchow was a great scientist not simply because through assiduity and keen perception he established a great point of view, solved a major problem, but because he recognized a problem which at this particular epoch was capable of solution. In 1850 the stage was set for the working out of the structural alterations in disease. Anatomy and histology had progressed so that the recognition of cell types and cell structure was possible. The methods of physiology and biochemistry were not, however, as yet utilizable for the study of disordered function. The science of bacteriology, destined to throw the greatest light on both the cause and the evolution of disease processes, was as yet unknown. It was obvious, then, that Virchow, although keenly aware that the logical goal of pathology is the study of disordered function, should have devoted his own lifetime to the more accessible study of altered structure.

An overemphasis for sixty years on the residual aspects of disease has not been without effect on the philosophy and mode of thought of the pathologist himself. A consideration of fixing fluids, of methods of embedding, of the action of dyestuffs on coagulated proteins, the purely observational and statistical attitude inherent in collectors of chance and uncontrollable material, have produced an essentially static point of view of disease. The confirmed morphologist is suspicious of anything in the making, he is bewildered by anything that may represent the essentially dynamic conditions of the living body.

If the object of pathology is to aid preventive and healing medicine, we must understand the causation and the course of disease rather than its results — must be interested in the forces engaged and the battle itself, rather than the appearance of the battlefield after the fight is lost.

The delayed development of experimental pathology is to some extent due to the arresting tendency of overemphasis on structure, but largely to the necessarily delayed development of methods of attack on problems of this sort. It is natural, however, that some investigators could not remain simple collectors of necropsy material, satisfied with deductions and retro-active judgment between demonstrable effect and presumable cause. Purely statistical methods of investigation must in more alert minds yield to comparative studies. Simple deductions from observed phenomena must be followed by inductive experimentation. To those who look for the explanation of disease in the resultant lesion, successful experimentation means the reproduction of similar lesions rather than the reproductions of such conditions as give rise to them. Chronic nephritis, retraction of the heart valves, arteriosclerosis, embolism, infarction, are all lesions, the experimental production of which has interested pathologists since Cohnheim. How little explanation such studies have yielded as to the causes underlying the original diseases as they occur, how little they have aided in their prevention and cure! It is true that the grosser mechanical methods of Cohnheim, such as instrumental destruction of the heart valves to produce insufficiency, and the injection of poppy seeds into the circulation to produce emboli and infarction, have given way to more refined methods of experimentation. A choice of chemicals may determine a lesion of the kidney confined to the glomerulus or the tubules, and careful study of coincident metabolism may parallel human nephritis. And yet the method of attack is still as blundering and empiric as ever, and mere striving for a closer similarity of lesion will never explain to what conditions the original disease is due. We have tried in vain to reason back from effect to cause, the tail has tried too long to wag the dog. It would seem as if the successful results obtained in the study of the acute infections should have led more morphologists to be born anew, to strive to experiment and reason from the beginning toward the end in spite of their predilection for the reverse process.

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* Chairman's address read before the Section on Pathology and Physiology at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916.

The successful experimental study of the infectious diseases has been possible through the determination of specific causative agents. The separation of the animate inciting factor of a given infection renders the study of that disease not only relatively simple but also logical, in that one proceeds from cause through progress to result produced. A lesion, when it occurs, assumes its proper terminal and subsidiary position. Many infections, indeed, though violent or even fatal, are not signalized by striking morphologic changes in the fixed tissues, and even in those cases in which profound structural changes ensue, they are at best no certain index of the conflict that has taken place in the body. The lesions of Peyer's patches and endothelial proliferation give little suggestion of typhoid fever as primarily a septicemia, the degree of the involvement of the lungs in pneumonia bears little relation to the outcome.

It is curious how the peculiarly fixed habit of thought of the morphologist renders him uninterested, inexpert and skeptical of experimental data, even when they are so peculiarly sequential and complete, as in bacterial infections. A leading histopathologist has recently prefaced his textbook with the statement that experimentation leads only to confusion. Such confusion, of course, is dependent on the type of mind of the would-be experimenter. Static pathologists of this type unfortunately still dominate our science. "Pathology" is still used to mean morbid anatomy rather than the natural history of disease. Would-be experimentalists have, at best, not been encouraged to relegate tumor diagnosis and necropsies to their proper place as routine. The clinicians, of course, prefer that type of pathology with which they are familiar, and pretend to regard it purely as ancillary to the medical art. Pathology is no handmaiden but an inspiring goddess, showing the way to more scientific methods of diagnosis and cure, instead of simply confirming or gently disagreeing with bedside opinion.

When of late years some of the younger pathologists have turned to experimental fields, they have naturally chosen those diseases which have been impressed on their minds during their morphologic training, they have investigated the chronic or the metabolic diseases. It is now possible to attack these problems with the aid of chemical and physiologic methods. I do not wish in any way to minimize the value of the laudable attempts that are being made, although these problems do not appeal to me as the timely ones. Their solution would seem to wait on the discovery of essentially new methods of attack rather than the simple applications of methods of use in the fundamental sciences, as is the present tendency.

I believe the experimental study of the infectious diseases is still, in spite of thirty years of increasingly successful endeavor, the greater field of promise for the investigating pathologist. Let me consider briefly the relative importance of the infectious diseases, and my reasons for belief in the timeliness of the problems they present.

I was led a few years ago to estimate certain numerical relations between infectious and noninfectious diseases, since no collected data were to be found for my purpose. A careful summary of the disease entities treated in Osler and McCrae's "System of Medicine" (first edition) from the standpoint of etiology was first made. Decision as to what constitutes a disease entity and what are simply varying manifestations of a given disease is in the nature of things somewhat arbitrary. And again it is difficult to estimate in some instances whether the evidence for a parasitic cause is as yet fully acceptable. In spite of these causes of error the findings are judged worthy of presentation. Three hundred and sixty-nine separate disease entities was the total obtained, and 144 of these (39 per cent.) were recognized to be due to infectious agents alone, another thirty are at least in part infectious in origin, and fourteen more are probably of similar nature. The total of the infectious diseases is 52 per cent. In a similar way and on the basis of the first classification, 40 per cent. of all the deaths in California in the year 1911 were directly or indirectly of infectious cause. Any subconscious prejudice which may have affected the gathering of these data is probably more than balanced by the truth that will eventually be learned concerning the causation of certain diseases that are here included under other headings. At least we may assume that the infections form a large and probably the predominating group of human maladies.

The infectious diseases, apart from their numerical and actual importance, afford today the problems of greatest interest and promise in medicine. In spite of the relatively great emphasis that has been laid on these diseases in the last twenty years, many questions of etiology, and still more of specific diagnosis, prevention and therapy, remain to be solved. Further concentration on these problems is recommended because, even with the methods so far developed, most tangible and practical results have been obtained. We may look forward confidently to the eventual clearing up within a finite period of the etiology in diseases of which the parasitic nature is at present only suspected. We may expect to develop more or less perfect specific methods for the diagnosis and evidence of protection against these diseases, and may anticipate relatively certain means for their prevention and cure. Every effective blow delivered against the infectious diseases will in turn diminish such chronic diseases as nephritis, endocarditis and arteriosclerosis, the initial infectious nature of which is in many instances recognized

The study of the infectious diseases will, at least for the present, continue more timely and profitable than similar effort expended on metabolic or chronic diseases, owing to certain qualities inherent in their causation and the methods of investigations involved

The parasitic disease is due to a single cause with predisposing factors of minor importance, whereas the other diseases are probably due to the operation of a number of causes or predisposing factors The single parasitic cause is not only separable from the body of the host, but also capable of reproducing the disease under a relatively wide range of conditions, and frequently in a number of different animals Apart from the handiness of a single separable factor, the study of an experimentally reproduced disease from its real beginning is probably of greater logical advantage than has been generally appreciated The type of pathology which follows forward rather than looks backward has already been sufficiently emphasized The methods of experimentation that have grown up in connection with bacteriology and immunology are successful in part because they are distinctive and original in development, and do not consist primarily in adaptations of the methods of other sciences

And lastly, the study of the infectious diseases has yielded the greatest practical results to clinical medicine, owing to the facts that not only is their cause specific, but also, in each instance the body of the host is likewise stimulated to a characteristic response On this specific reaction of the animal body to an infecting agent depends the striking diagnostic tests and all vaccine and serum therapy

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GRIP IN CHILDREN [*]

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The syndrome commonly called grip is endemic throughout the entire cold weather months of the year, its curve presenting waves of greater or less severity during the course of a single season The annual curve presents periodical elevations a number of years apart, the number of cases in certain years being so large as to reach the proportion of an epidemic, at which time there is also a marked increase in the severity of the disease Such prominence as this was acquired during the past winter (1915-1916) There can be no doubt that grip is a general infection, presenting systemic manifestations of greater or less severity I do not know whether or not all the conditions I shall describe are due to the *Bacillus influenzae*, but I have so classed them because they have appeared in the course of a general epidemic of grip, and are apparently of the same infectious origin

Common Type—The prevailing type during the past season was that most commonly encountered It was characterized by a sudden onset with prostration of greater or less severity, and a rise in temperature lasting from two to five days The height of the temperature varied widely, from one to two degrees' elevation to a temperature of 105 or 106 Generally speaking, in those cases in which the temperature became suddenly and extremely high, but of short duration, the prostration was most marked This type of the disease was frequently difficult to distinguish from pneumonia The physical signs of pneumonia were not present, but this is of course frequently the case in the early stages of pneumonia itself, and the pulse-respiration ratio was not interfered with When the temperature was of longer duration (from three to six days), even if moderately high, the prostration was usually less marked

Older children were subject to pain in various regions, such as the head, arms, legs and abdomen These pains were sharp and violent or boring in character In infants high temperature and severe prostration were the chief symptoms A considerable number of these patients had short attacks and speedy convalescence, frequently, however, the convalescence was long drawn out, the patient regaining strength slowly, while death occasionally followed after two days' illness A marked feature in these cases was an irregularity of the heart's action

Catarrhal Type—The main difference between this and the type just described is that bronchitis and coryza were prominent symptoms The lacrimation and coryza and the injection of the eyes were so severe as to remind one of measles The bronchitis was so severe that it closely resembled the capillary bronchitis of older writers This bronchitis was generally of short duration, but it was naturally in this type that pneumonia was the most frequent sequel The type of pneumonia of course varied, but in spite of the generalized bronchitis, the lobar type of pneumonia predominated, the cases of bronchopneumonia having been comparatively few Naturally, the greatest mortality came from this complication

Gastric Type—In many instances vomiting was so violent and persistent at the onset that the term "gastric type" seems justifiable This vomiting was so severe at times that the patient appeared sometimes to be in danger of dying from exhaustion So prevalent was this type that a number of physicians thought they were dealing with cases of cyclic vomiting I do not think they should have been confused because the vomiting was of shorter duration than usually occurs in cyclic vomiting, also, some of these cases occurred in children who were accustomed to have recurrent vomiting, and even they realized the difference between the nature of the attacks

The evidence of diacetic acid in the urine, which usually appears before the onset of vomiting, in these cases was entirely absent at this time

Diarrhea—This is frequently described as a complication or sequel of grip, and, in fact, in children it is an accompaniment of almost any condition, but the number of cases of diarrhea complicating this epidemic was an entirely new experience to me These cases differed in no way from the infectious diarrhea so common in summer The stools passed through the usual stage of fecal, mucous, pus and blood I regret that I did not have an opportunity to study their bacteriology This diarrhea came on immediately after an attack of high temperature and prostration, and did not follow the catarrhal type in a single instance Its duration was one week

Convalescence—This was variable In some of the most severe cases, the patient convalesced with remarkable rapidity, while some of those cases which appeared mild were long drawn out, the patient remaining quite weak for a long time. The convalescence I refer to is that in cases without complications; complications, of course, made convalescence tedious.

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[*] Read before the Section on Diseases of Children at the Sixty-Seventh Annual Session of the American Medical Association Detroit, June 1916

Exacerbations.—Among the most usual complications and sequelae may be mentioned exacerbations. In a number of instances there was noted an exacerbation or reinfection, I do not know which. These were sometimes as much as two weeks apart, and as far as severity is concerned, they bore no relation to each other. In many instances two such recurrences were observed.

Pulse.—I have noted several cases of irregular pulse. Some of these were simple arrhythmia, while others were of varying degrees of weakness. This may have been merely toxic, but I have suspected that there was really a myocardial involvement.

Otitis Media.—This was most frequently observed in those cases in which catarrhal symptoms predominated.

Pyelitis.—This has been quite common as a sequel. I am not prepared to explain this, unless there was a low-grade infection existing previously, not sufficiently severe to cause attention to be attracted to it, but brought out by the lowered resistance of the patient. The infection was due to the colon bacillus.

Pneumonia.—This has already been mentioned as a complication, but during the past year there were noted several cases of what has been described by several authors as recurrent pneumonia, that is, several attacks of apparent lobar pneumonia, with perhaps as much as a week intervening between attacks.

Cough.—One of the most troublesome sequelae was persistent cough. This might follow a simple bronchitis or a pneumonia. This cough was at times harsh and distressing and its persistence exceedingly discouraging. At times it was indistinguishable from whooping cough. The exact nature of this complication was sometimes difficult to explain. In a number of cases, however, I was able to elicit D'Espine's sign, and this condition led me to the conclusion that it might be due to enlarged peribronchial glands.

Prolonged Temperature.—Another troublesome sequel was prolonged fever, ranging from normal to 100 or more and persisting apparently indefinitely. Some of these cases gave no evidence of a rise of temperature unless the thermometer was used, while in other instances the child became drowsy and cross with the rise of temperature. The cause of this prolonged rise in temperature was as difficult to find as was that of the cough, but, as in the case of cough, I was frequently able to elicit D'Espine's sign. This brings me to the same conclusion, that the rise in temperature was quite frequently caused by enlarged peribronchial glands.

Von Pirquet Reaction.—In cases of cough and rise in temperature, as just described, I have not infrequently secured a positive von Pirquet reaction. This may be a coincidence, the reaction not having been tried before, and possibly would have been positive previously, but I think from my histories in cases of tuberculosis that grip ranks second only to measles and whooping cough as an antecedent of tuberculosis.

Meningitis.—Pure influenza meningitis is a clinical entity, though rare; I have never seen a case, but I think pneumonia meningitis following grip is slightly more common than after primary pneumonia.

Skin Eruptions.—During this epidemic there was a number of skin manifestations, such as simple erythema, scarlatiniform, morbilliform, urticaria and sudamina.

A point well worth emphasis is that nursing infants are by no means immune from grip.

TREATMENT

I shall outline treatment very briefly. By far the most important part of treatment is prophylaxis. This is particularly important in young infants, since the mortality among them is very high; therefore, when any member of the family has grip, or even a bad cold, which may be a mild grip, he should be kept away from the younger members of the family. In the case of breast-fed infants the mother who has grip should be instructed to keep her nose and mouth tied up with a handkerchief while nursing or when caring for the infant. This is equally important in the case of any attendant who is compelled to go very near the infant. Large crowds or places of general gathering should be avoided. On the other hand, children should be kept in the open air as much as possible, except in dry windy weather, the dust under such conditions tending to spread the contagion, or at least to irritate the nasal passages to such an extent as to make them susceptible.

In the usual type my main reliance has been on sodium salicylate. I think that my best results have been with this drug, and I still prefer the natural to the synthetic product. Occasionally the aching is so severe as to require opium. An initial dose of Dover's powder is desirable, and of course a purgative should be administered. Regardless of how mild the attack may be, the patient should be confined to bed.

In the catarrhal type I use nose drops of menthol and camphor in liquid petrolatum. This is not only antiseptic, but makes the patient decidedly more comfortable, and I am quite certain it tends to prevent middle ear infections.

The bronchitis is treated as any other bronchitis. In the tight stages wine of ipecac may be given to promote an outflow of mucus, and after this has been accomplished, ammonium chlorid may be used advantageously. At times the cough is so severe as to require opium, which should not be withheld if there is constant racking, since the strain on the heart is too great. The general principles of pneumonia treatment are used.

The gastric type presents difficulties, since the child can take nothing while it is vomiting. Keeping the infant absolutely quiet is about all that can be done until the vomiting ceases. In these cases the bowels must be moved by means of enemas.

The cases of diarrhea are treated as its analogue, summer diarrhea. An initial colon flushing, carbohydrate diet and small doses of salines have been most satisfactory in my hands.

The irregularity of the heart calls for absolute rest until all arrhythmia has ceased. This may suffice, but in some instances digitalis must be administered.

Otitis calls for the usual treatment. Personally, I favor early incision of the membrana tympani in cases of otitis rather than waiting for the bulging of the membrane.

The cases of persistent cough are exceedingly troublesome. Fresh air, tonics, such as cod liver oil, and systematic rest in the recumbent position are most beneficial. Occasionally, the severity of the attack calls for opium. Unfortunately, many of these cases persist until the advent of warm weather. The same may be said of prolonged fever.

Grip should be a quarantinable disease Especially is this true of schools, from which teachers and pupils afflicted with grip or "colds" should be excluded

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ABSTRACT OF DISCUSSION

Dr Isaac A Abt, Chicago If one asks, What is the etiology of grip, what have the studies of grip shown? he finds there is a great deal of confusion Bacteriologists find every organism It makes us think that the grip infection is very elusive and difficult to find, or else the bacteriologists have not solved the question The seasonal occurrence is another thing Why does it begin to disappear when the sun appears being practically absent during summer and early fall They tell us that even in California and Florida grip epidemics occur during the winter, so that it is apparent that so-called grip is a disease of the winter time We are apt to overdo the matter of sending children out of doors in all kinds of weather I know babies who are taken out doors when I would not drive my horse out of doors Babies are frequently taken out and allowed to remain an excessively long time until they are chilled and uncomfortable We fear the effects of heat but absolve excessive cold from all harm to the baby Extremes of either heat or cold probably lower the little baby's resistance I have known babies convalescing from grip and progressing favorably when kept indoors, and when taken out and exposed to the cold and wind have come back with severe exacerbations The seasonal occurrence indicates that the weather conditions in some way or other bear casual relation to the grip Very often, I think, vomiting is not an expression of gastro intestinal infection but of general toxemia In case after case the first thing noted is that the baby vomits incessantly, and in those babies who are subject to cyclic vomiting it seems to me the vomiting is brought on by this so called grip infection These babies, in addition, often have an acute swelling of the adenoid tissue in the nasopharynx, and manifestation of acute inflammatory conditions in the tonsils These conditions very soon lead to complications in the middle ear As to the cough, I quite agree with Dr Royster that this is sometimes out of proportion to the rough breathing I think it is often due to pharyngitis, and often to infection of the mediastinal or bronchial glands A roentgenogram made of these chests will show enlarged bronchial glands When there is no von Pirquet reaction and no other reaction to tuberculin it may be assumed that the cough is probably due to grip infection of the mediastinal glands In relation to pyelitis this seems to occur frequently following grip It seems to me there is more nephritis produced by excessive use of hexamethylenamin than we commonly think, and many cases of acute hemorrhagic nephritis are not so much due to the organisms and toxins of grip as to this drug

Dr J P Sedgwick Minneapolis I was very much interested in what Dr Abt said in regard to vomiting Several years ago I called attention to the relation of infection of the upper respiratory tract to a certain type of recurrent vomiting Sometimes these cases are relieved by treatment of the respiratory tract Dr Smith afterward independently found this same condition I am sure there is a connection between them This winter we have been following this grip epidemic very closely, and I believe by following these cases with a flouroscope and plates we will get a great deal of instruction I know we have been greatly instructed and have found some of our older ideas incorrect As to treatment in some of these cases in which nasal obstruction in younger children is pronounced, the careful use of epinephrin is very beneficial

Dr Frank S Churchill, Chicago We should be more careful in our description of these cases We have all been treating them this winter We had an epidemic of what looked like grip in Chicago, but in most cases—practically all of my own and most of those of others—the bacillus of influenza was not found in the nasal or pharyngeal secretions, but a form of streptococcus was present If we are to adhere strictly to the use of the term grip for infections with the bacillus of influenza then these cases were not grip' They acted like grip, but in reality they were not I would like to ask Dr Royster if in his respiratory cases the bacillus of influenza was found

Dr G H Fellman, Milwaukee, Wis During the month of December we had 150 cases of this so called grip at the Milwaukee County Dependent Home for Children At that time the days were cold and the roads very dusty, as very little snow had fallen Examination of smears from the throat and nose showed the presence of a small diplococcus streptococci and a very few Weeks' bacilli Pneumonia developed in about 10 per cent of the cases It was of a mild type, running its course in from three to ten days

Dr Harry Lowenburg, Philadelphia I would like to ask Dr Royster if he found leukocytosis present It occurred in all of my cases

Dr Joseph Brenneman, Chicago There is a difference between 'grip" and "grippe" I think grip is a very useful word to designate these periodic epidemics, while 'grippe" is synonymous with influenza It is very interesting when we observe such an epidemic as we had in the last winter to find that in North Carolina and New York they have had the same epidemic It must be the same organism Of the symptoms, I would say we found almost the same as described by Dr Royster, except that two stood out conspicuously One was abdominal pain If a mother said her child had stomach ache, I would look in the throat If I could not determine a definite infection there I would look in the ears and I would often find an otitis That would tell me that the child had had a throat infection previously I know of at least three patients operated on for appendicitis in which the appendices were found perfectly normal One of those cases showed enormously enlarged mesenteric glands suggesting the possibility of glandular infection In two other cases there were hemorrhages into the intestinal walls In one most interesting case that I saw with Dr Krost, the child had a sore throat very much swollen with spots, then a hemorrhagic urticaria, and then a very decided abdominal colic with a palpable lump in the abdomen, and the abdomen was much distended In other words, the child began with sore throat, and then had all the other symptoms of a typical Henoch's purpura, with final recovery I think there is no question that the child had in its intestinal wall a hemorrhage The tendency to hemorrhage was very common in these cases I saw one patient who had an inflamed throat, then a hemorrhage on the eyelid, and in the hand, then an exsanguinating hemorrhage from the bowels, and afterward the urine for two months looked like pure blood This hemorrhagic nephritis lasted for over two months and then cleared up I would estimate that over 30 per cent of our cases had abdominal pain as a decided symptom, that was helpful in diagnosis Another thing is the relation of these cases to certain exanthems In the same hospital ward I have seen a child with sore throat, another with an indefinite eruption, and then another with typical scarlet fever It has been a very unhappy winter for us, especially in hospital work because in many cases it was impossible to tell whether certain cases were scarlet fever or not The mortality of less than one out of three or four hundred cases as reported by the health department made us think it was not scarlet fever that we had to deal with in most of these cases, but the type of infection described by Dr Royster, with a scarlatiniform eruption One almost wondered whether the early typical grips," the late 'grips' with indefinite rashes, and later in the season, the many very mild scarlets, were not all the same, bacteriologically

Dr V W Turner, Des Moines, Iowa The treatment we usually used was salicylates, but we found a large percentage get well without treatment

Dr J I Durand, Seattle We had the same epidemic in Seattle. It is a clear-cut clinical entity, and the name grip is as good as any for the condition There is one point I want to make, and that is in regard to infection I think it is purely a respiratory infection and contaminated air must be inhaled to produce the disease Every child in the ward of a hospital, or every member of a family will generally become infected, and yet I have seen children with cases within three feet on each side of them without infection, merely by putting a double wall of gauze between the beds and absolutely preventing drafts which might sweep the organism from one bed to the other The same nurses without any special precaution as to changing gowns, took care of all the children

Dr Eleanora S Everhard, Dayton, Ohio We had much the same kind of an epidemic in Dayton As to treatment following the theory that the body cells as soon as they become excessively acid swell up and cause congestions many of us treated our patients with large doses of alkalies In children the vomiting very promptly subsided with potassium citrate They could take that when they could take nothing else We got much better results with potassium citrate and could give it in heavier doses than the salicylates

Dr G N Ryan, Des Moines, Iowa Considering these cases from the standpoint of infection we should bear in mind the necessity of keeping the respiratory tract clean by the use of sprays of some alkaline solution, also of administering alkaline solution, sodium bicarbonate and glucose with a small catheter in the bowel for four hours slowly, then abstaining for four hours, and then giving it again By using minute doses of atropin you can prevent this weakened condition of the heart and irregular heart that you find without stimulation Creosote in vapor form seems to have considerable effect on the respiratory tract The acid condition will soon disappear

Dr Meredith Johnston New York I thought I was having many cases of influenza until I had a large number of cases of otitis media Twenty-two were examined by a bacteriologist, and in not one was the influenza bacillus found

Dr Lawrence P Royster Norfolk Va I plead guilty to the use of the nonscientific expression "grip" I emphasized the fact that I was using the term because of an epidemic of supposed grip I regret I was not in a position to make bacteriologic studies at the time, except of a single case of pyelitis I mentioned We are dealing with a general infection, and that is as far as any one can go at this time Dr Abt spoke of the gastric type being an initial manifestation I do not know but that it is part of a general toxic condition It may be merely one of the predominant symptoms of this particular epidemic The seasonal development of it is about as interesting as the so-called seasonal diarrhea, one occurs at one time of the year and the other another That is all we know I do not approve of sending children out of doors in bad weather Generally speaking, fresh out-door air is better than closed houses I did not make blood tests nor any bacteriologic tests for the reason that the cases occurred in very rapid succession in the course of a rather busy season and in a house-to-house practice Unless the bacteriologic examination is undertaken under the most approved conditions no one can state what it is there is so much contamination Most of these cases are due to streptococci implanted on a mucous membrane of lowered vitality from some other condition I find that these patients have abdominal pains as they have pains in various parts of the body I do not claim any treatment as being a specific

Restriction of Investigation in Hospitals—If one wishes to gain an idea of the reason why medical science advances so slowly and haltingly one has but to look at those who are at present the investigators and to consider their opportunities To prevent or combat disease it is necessary to know its origin and its progress, and one has but to ask what opportunities our investigators have of seeing the disease invade the body, and of observing its progress, in order to estimate the amount of knowledge likely to be acquired by them Investigation is chiefly carried on in the laboratories and in the wards of hospitals No doubt in both places observations of the utmost importance are made, but what opportunities have these investigators of seeing disease in its early stages and during its progress? In the wards of the hospital, as you know disease is not presented in its early stages, and the opportunity of watching its progress is limited to the short time the patient spends in the hospital It is true that in the out-patient department many cases of disease in its early stages may present themselves, but here again the difficulty of following cases is well-nigh insuperable—Sir James Mackenzie

THE ULTIMATE RESULTS IN THE TREATMENT BY ARTIFICIAL PNEUMOTHORAX *

A G SHORTLE, MD
ALBUQUERQUE, N M

During the past four years there have been published in America numerous reports on the treatment of lung tuberculosis by artificial pneumothorax These have proved beyond doubt the value of this procedure so far as the early symptomatic results are concerned, provided properly selected patients are operated on It is well established that in induced pneumothorax, most remarkable and almost immediate symptomatic improvement will be brought about High fever will be brought to normal, sputum is greatly reduced or abolished, cough disappears, the patient gains in weight and strength, and in many bilateral cases the râles in the working lung will soon disappear This is certainly well established, but the question that has troubled every one of us who have used this procedure, I am sure, is whether the final result would be in any way comparable to the early improvement

So far there has been practically nothing published on this, owing largely to two facts First, there are only a few American operators who have used the procedure for any considerable time, and second, of the few who have, the majority have kept up collapse for long periods, fearing to let the lung reexpand

In studying the discharged patient the points of most interest to me have been the permanency of results, the patient's working ability, the condition of the reexpanded lung and the amount of contraction of the chest wall on the collapsed side The study of these cases also does much to clear up what has been to all of us, I am sure, a most perplexing question that of the time necessary to keep up the collapse

Before taking up my own results I will as briefly as possible summarize the little that is to be found in the literature regarding discharged patients Spengler,[1] reporting on eighty-two patients operated on by Brauer and himself previous to 1909, sets the following standard for a clinical cure complete absorption of the pneumothorax for more than nine months, disappearance of fever, cough, bacilli and expectoration, and resumption of normal work He finds fifteen cases meeting these requirements among the eighty-two Saugman[2] reports as clinically cured fifteen patients who went without treatment for periods varying from one to seven years Zink[3] reports thirty-one patients out of 110 treated as fully capable of working, and nine clinically cured and with the pneumothorax absorbed "for a long time" Wolff and Ehrlich[4] report four cases clinically cured and two without treatment for from three to fourteen months, respectively They had treated forty-four cases altogether Burnard[5] cites two or three cases without treatment for periods of six months, one year and two years to prove that clinical cures can result Schertenberg[6] reports eight cases in which treatment has terminated for "several months" Most of the patients have resumed work without inconvenience

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* Read before the Section on Pharmacology and Therapeutics at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

[1] Spengler München med Wchnschr 1911 lviii, 460
[2] Saugman Beitr z Klin d Tuberk 1913 xxxi 571
[3] Zink Beitr z Klin d Tuberk 1913 xxviii 155
[4] Wolff and Ehrlich Fortschr a d Geb d Rontgenstrahlen 1913 xxii 518
[5] Burnard Rev méd de la Suisse romande 1915 xxxv, 256
[6] Schertenberg Russk Vrach Nov 2 1913

To obtain data from American operators, I wrote to some twenty who had used the method for a considerable period The difficulty of keeping in touch with the discharged patient probably explains why only a very few could give actual results, though as Brauer has said, it is particularly hard to tabulate results in pneumothorax work, and each case should be studied by itself

Floyd,[7] in 1913, said

> Two years ago, in conjunction with Dr Robinson, I reported twenty-eight cases treated by artificial pneumothorax Of these some eight cases had either shown an entire arrest or were approaching that condition Of these arrested cases six are in excellent condition today One has died through no fault of the method and one has within the past year shown an extension of the old process into the previously collapsed area of the lung

Under date of May 21, 1916, Dr Floyd writes me regarding those cases that "of the six I think at least three are in good condition still The others I do not know about"

E R Baldwin has four patients who have been without treatment for periods varying from six months to two years and discharged as apparently arrested All these are doing well

Webb and Gilbert have eight patients who have been discharged with absence of symptoms, the periods varying from two months to twenty-seven months None of these have relapsed

Maurice Fishberg reports two deaths and three who have relapsed among seventeen considered well at time of discharge

Drs Ralph and Ray Matson write me that they have discharged eighteen patients between the dates of July 2, 1913, and May 15, 1916 Four were discharged as clinically well, nine as ambulant arrested, three favorably influenced, and two as relapsed Three of these are now working

There is great diversity of opinion in the matter of the time of collapse necessary for good results Of course, this depends on the amount of involvement, whether there is a cavity, etc , but assuming that practically all the patients operated on are third stage cases the average time should be somewhat similar with all operators

Spengler,[1] in reporting on fifteen cases showing clinical cure, gives the following time for treatment one case two months, one case five months, six cases seven and one-half to ten months, three cases ten to sixteen months, and four cases eighteen to twenty-four months He thinks the time required depends largely on the presence or absence of pleural adhesions and the occurrence of complications during treatment

Saugman[2] reports that of twenty patients showing clinical cure, he treated one case less than one-half year, four cases one-half to one year, five cases one year to one and one-half years, eight cases one and one-half to two years, one case two to three years and one case three to four years

Forlanini has written extensively on induced pneumothorax, but has said little that I can find on the subject of the length of time that collapse should be maintained That he maintained collapse for long periods, however, is evident, for Balboni[8] quotes him as treating a woman for ten years, and in a paper[9] in 1910 he mentions five cases in which he had maintained collapse for periods varying from two to six years

Dumarest and Murard,[10] reporting on thirty-eight cases for from six months to five years, say there are three cases of complete recovery, but the treatment had to be maintained five years Wolff and Ehrlich[4] give the average time of treatment one year Schertenberg[6] gives the average time of treatment as one to one and one-half years Zinn and Geppert[11] report the average time one year or more

Of American operators, Baldwin gives the average period that his patients were under treatment at approximately one and one half years, Fishberg at nine months, and Francine and Klein at six to eight months Webb and Gilbert's cases varied from one of only six months to one of forty-one months, but averaged nineteen months They add, however, that "our best cases wish to continue the treatment indefinitely and we have seen no reason in our experience to advise them otherwise"

E A Gray gives the average time in successful cases at from one and one-half to two years

In the matter of reexpansion and physical signs, Dr Baldwin writes that reexpansion was complete in three cases but he had not seen the other case for over a year The three cases had plenty of crepitant râles, he did not know about the fourth Dr Gilbert reported reexpansion complete or nearly so in all their patients, and that "rales and rhonchi return with the reexpansion of the lung in practically all cases we have studied"

Dr Gray reports that some of his cases reexpanded and others remained permanently collapsed

Certainly reexpansion is largely dependent on the amount of pleural involvement, and to a less degree on the amount of pressure used and the length of time collapse is maintained

As stated, the purpose of this paper is to study the discharged patient However, for the hearer properly to appreciate the results in the cases we have treated, a brief review of the cases treated would be desirable

I shall deal with only 104 cases, the first of which began treatment in May, 1912, last in August, 1914 Twenty-five of these cases are to be eliminated as they proved inoperable, and are of interest only in showing that almost one case out of four had such extensive adhesion that operation was impossible This leaves seventy-nine cases that allowed of sufficient collapse to produce therapeutic effects Of the seventy-nine patients, thirty-five are dead, two were apparently made worse, eighteen were improved, and twenty-one were discharged and treatment stopped as being symptomatically cured

Twelve of the eighteen marked "improved" are still under treatment

Coming now to the twenty-one patients discharged as symptom free, nineteen were third stage, two were second stage cases, seventeen were progressive and four were stationary Sputum was positive in all All were febrile cases and all had tried the usual rest cure and climatic treatment The majority were sanatorium cases and all had failed

These patients have now been without pneumothorax treatment for the following periods two over three years, four over two years, five over one and one-half years, six over one year, and four for six months or over There are only three of these cases that I have not heard from within six months, and as best I can learn, of the twenty-one cases the following describes their present conditions Two have relapsed and died, one, a physician, gave up treatment earlier than we advised and returned to Connecticut and plunged into a heavy country practice He got on well for about a year The other went six months after treatment was stopped before having a hemorrhage that after about a week resulted in his death This patient led what would be a very strenuous life for any well man Of the remaining nineteen, fifteen are well and working, and three others were when last I heard of them, one is now ready for employment

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[7] Floyd Boston Med and Surg Jour 1913 clxix 713

[8] Balboni Boston Med and Surg Jour clxii 761

[9] Balboni Riforma med 1910 xxvi 555

[10] Dumarest and Murard Bull med Paris 1914 p 15

[11] Zinn and Geppert Beitr z klin d Tuberk 1915 xxxiii 111

Of the nineteen patients living, six show rhonchi and râles after cough Seven are negative, six I do not know about Of thirteen cases I have measured for contraction on the collapsed side, it varies all the way from 2¾ inches to 1 inch, averaging about 1½ inches All of our cases except three of the more recent ones have fully reabsorbed, as we have demonstrated both by physical examination and by the fluoroscope Seven have no sputum whatsoever, two negative sputum and four positive, of the others I do not know The apex beat in thirteen cases showed a displacement to the left averaging about 1 inch In all these the left lung had been collapsed

In the important matter of the time required for treatment, ours have varied from one who received gas for thirty-four months to one who took it for only four months They have averaged fifteen and one-half months Besides our twenty-one patients discharged as symptom free, there were six who were discharged very much improved and able to take up some employment Of these six, three are still working and in good shape physically, though, of course, showing marked physical signs on examination One has died and two are in poor shape physically

SUMMARY

Out of seventy-nine patients receiving lung collapse, nineteen are today working and in good shape physically, a number of these are symptom free Three others discharged as improved are working but show marked involvement of the lung To the layman this may not appear as a brilliant result, but I am sure it will to any one who has treated third stage consumptives A good proof of the class of patients operated on is afforded by the fact that of the twenty-five patients who proved to be inoperable on account of adhesions, sixteen are dead, and seven are living but in bad shape physically Only two are working and only one is really any better He was perhaps the most favorable case of the 104 patients that I attempted to operate on, and I attempted it only as he had been a long time on the cure and his finances were at a low ebb In other words, of the inoperable patients only two, or 8 per cent, are working, and only one, or 4 per cent, is improved, while of the patients operated on, twenty-two, or about 28 per cent, are working and nineteen, or 25 per cent, are in good shape physically

Our results appear to be much better than those of other operators I can ascribe this only to the following factors

1 Most of our patients have been treated in our sanatorium, where the complete rest so essential to good results can be enforced I often feel with Saugman that the procedure should not be undertaken outside an institution

2 Our patients have been largely of the more intelligent middle class, with sufficient funds to afford proper living conditions and with sufficient brains to lend intelligent cooperation

3 They were all treated in a very favorable year-round climate

4 This I consider important They received small insufflation of gas, never exceeding 500 c c, and as a rule 250 to 350 c c The habit of introducing 800 to 1,000 c c at one operation is always sufficient explanation to me why a given operator has not had success with artificial pneumothorax.

I should add that in two cases reported on, the collapse was started by other physicians, and in one it was maintained for the last few months by another operator

In the treatment of all patients during the last three years, my co-worker and associate, Dr LeRoy S Peters, has had an equal part, and such success as we have had should be credited to him quite as much as to myself

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DUODENAL ULCER

REPORT OF A CASE IN WHICH OPERATION WAS FOLLOWED BY IMPROVEMENT *

H M McCLANAHAN, M D
OMAHA

A D, girl, aged 7 years, came under my observation, Oct 19, 1915 Three other children in the family were all well This child was well until 5 years of age, never having had any acute disease In September, 1913, she was taken acutely sick with severe pain in the stomach and persistent vomiting first of the food contents, later of green mucus, very sour The attack subsided in two days The child was fairly well for six months, when she was taken with a similar attack Then there followed another period of six months of fair health Then in October, 1914, there was another severe attack and this was followed on the second day by a very profuse bloody discharge from the bowels The mother said the stool was black and she was entirely certain it contained blood There was no tenesmus associated with this Again the child recovered The parents noticed that she was weak for a considerable time During the year preceding my examination, there were four separate attacks of gastric pain and vomiting The vomited matter after every attack consisted, first, of the undigested food, and later of green mucus During the last attack—about three months before the child came under my observation—there was again considerable dark blood in the stool, one movement containing many small dark blood clots In the intervals of all these attacks her appetite was fairly good and the bowels were regular Sleep was good The parents said that while they knew the child was growing in height, she had lost about 5 pounds in weight during the year The weight at my examination was 42 pounds

The child was thin The skin was soft and fair and free from blemishes Heart and lungs normal Liver not enlarged No evidence of organic nervous disease Reflexes normal Abdomen flat, no tenderness except in the region of the pylorus Here there could be palpated a doughy mass slightly movable, irregular in outline but no nodules and tender on pressure There was no icterus The most interesting symptom was a distinct peristaltic wave, or rather a series of waves passing across the stomach from left to right This symptom was readily induced by drawing the finger across the stomach Parents stated they had often observed this symptom It was not attended by pain There was a slight secondary anemia but no leukocytosis The urine was normal except that it con-

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* Read before the Section on Diseases of Children at the Sixty Seventh Annual Session of the American Medical Association, Detroit June 1916

* This article is abbreviated in The Journal by omission of a review of the literature The complete article appears in the Transactions of the Section and in the author's reprints A copy of the latter will be sent by the author on receipt of a stamped addressed envelope

tained indican No test for free hydrochloric acid in the stomach was made Dr John D Reid, in his letter to me accompanying the patient, said he first noticed the peristaltic wave one year previous, but he could make out the pyloric mass before that time I wrote Dr Reid and I quote from my letter as follows "From the history presence of a mass at the pylorus, the fact that the child passed blood freely a year or more ago and again recently and the peristaltic wave lead me to believe that we have a partial stenosis of the pylorus due either to an ulcer or malignancy I told the parents that after what you had done I would advise an operation" The parents decided to wait but returned to Omaha Oct 27, 1915 and the child was operated on, Oct 28 1915 by Dr A F Jonas I quote from Dr Jonas report to me of the operation as follows

The patient was placed under the influence of ether and the usual aseptic precautions were carried out

'The abdominal walls were quite thin and a peristaltic wave beginning over the left costal arch and extending toward the right and ending over the right rectus muscle could be easily excited by tapping the abdominal wall in the epigastrium

A small mass could easily be felt about two fingers breadths below the right costal arch and over the rectus muscle A median incision disclosed a largely dilated stomach which crowded into the wound and could be lifted out on the abdominal surface

'At the pylorus there appeared a round circular thickening which involved the entire pyloric circumference It was thick and firm and evidently was composed of a dense mass of connective tissue It occupied the site of a healed duodenal ulcer

'An attempt to invaginate the stomach so as to enable the index finger to be pressed into the pyloric opening indicated that the orifice was exceedingly small The pyloric ring could not be stretched and we evidently had a pathologic partial obstruction which retarded the escape of the gastric contents

'A local plastic operation at the pylorus, was out of the question on account of the large mass of new connective tissue therefore a posterior gastro-enterostomy was done The operation was an easy one and involved no difficulties or complications The patient made a good recovery'

She remained in the hospital ten days and returned home During the first month under a careful diet, she gained 9 pounds in weight Then she was permitted to eat when and what she pleased and as a result she had four attacks of vomiting each lasting not more than twenty-four hours Then March 6 1916 the parents wrote me that they were discouraged I replied telling them to put the case under Dr Reid's care I again wrote the doctor as to her diet etc From March 6 to June 1, 1916 she has been entirely free from any further symptoms and has made a steady gain in weight Dr Reid reported to me June 1 that he had carefully examined the child that the mass about the pylorus had entirely disappeared as far as he could determine by palpation and that there was no tenderness on pressure

COMMENT

After looking through the literature, my case seemed unusual in two particulars, namely, the appearance of the peristaltic wave and the tumor mass at the pylorus Dr Jonas informed me that, when he examined the mass, just beyond the pylorus, he could see radiating white lines showing through the adherent peritoneum, and at this point there was decided induration From his extended experience he had no doubt that this was the site of a healed duodenal ulcer The presence of the wave was to me evidence of spasm of the pyloric ring Another evidence that the ulcer was duodenal, rather than gastric, was the clear history of intestinal hemorrhage and no evidence of hematemesis The tendency to relapse in this case is evidence that recovery from operation does not mean recovery from the effects of the disease, that after operation medical treatment is important, indeed, essential to complete recovery This thought has been well brought out by Dr Sippy of Chicago The steady improvement in the child's general health and the disappearance of the inflammatory mass is positive evidence that we were dealing with an ulcer and that the mass was not malignant[1]

468 Brandeis Building

ABSTRACT OF DISCUSSION

Dr E E Graham Philadelphia Pyloric stenosis in children is not so uncommon as is ordinarily supposed Some years ago I saw my first case of pyloric stenosis in an older child and since then I have seen several cases of this type some with and some without a tumor Pyloric stenosis associated with duodenal ulcer may or may not be common, but I recall at least one series of cases of gastric ulcer Dr McClanahan s case is of unusual interest

Dr C G Kerley New York The peristaltic wave is a frequent indication of pyloric stenosis in infants but it is rarely found in older children Dr McClanahan was fortunate in that his case showed both the presence of a palpable tumor and the peristaltic wave In my most recent case of hypertrophic stenosis in an infant aged 6 weeks, neither the operating surgeon nor I could feel a tumor through the abdominal wall Nevertheless on operation a pyloric tumor was found one inch in diameter The difficulty that surrounds abdominal palpation in little children is considerable and because a tumor cannot be felt, it does not mean that such a tumor does not exist

Dr John Zahorsky St Louis I recently had a case a child four weeks old which for several weeks vomited a great deal and complained of pain in the stomach Once a little blood was demonstrable in the stool Roentgen examination was not positive We finally made diagnosis of duodenal ulcer The boy got well Most of the positive ulcer diagnoses except those made from Roentgen examination have been made postmortem The chances are that these ulcers are comparatively common but we do not diagnose them If the ulcer is near the pylorus and involves the pyloric ring, stenosis will follow If it does not involve the ring we may have no further symptom as in my case treated only a few months ago

Dr Harry Lowenburg Philadelphia The peristaltic wave in Dr McClanahan s case can be explained by the fact that he evidently was dealing with pyloric obstruction from some cause or other, either spasm hypertrophy or as he says, duodenal ulcer I think it would be very interesting if he could make roentgenograms to find out whether the pylorus is functionating or not In one of my earliest cases of pyloric stenosis a gastro-enterostomy was performed Later I had roentgenograms made and they showed that the pylorus was not functioning that the artificial opening was doing the work This child at the age of 8 years is living and in good health I probably have seen about thirty or forty cases of pyloric obstruction of one type or another I have had about nine operated on All had gastro enterostomies done I understand that of late pyloroplasties are becoming more popular—the Ramstedt operation as modified by Strauss of Chicago, for instance Dr Strauss reports very good results, but pediatrists and surgeons whom I have spoken to feel that it is a difficult operation, except when performed by Strauss himself, perhaps Surgeons generally seem to feel that the Ramstedt operation is not the thing to do I saw one about two weeks ago in which the operator, instead of going down to the mucosa included the mucosa in his incision In that case gastro-enterostomy had to be done anyway From results in my own cases I should be led to prefer posterior gastro enterostomy.

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[1] The following articles on gastric and duodenal ulcer in children will prove of interest

Friedenwald Julius Am Jour Med Sc August 1912

Borden Veeder Am Jour Med Sc November 1914

Schmidt W Berl klin Wchnschr March 1913 abstr Arch Pediat xxx 383

Flesch Herman Jahrb f Kinderh 1912 xxvi No 5 abstr Arch Pediat June 1913

Bichat and Imfeld in Chenisse Sem med September 1913 abstr The Journal A M A Oct 4 1913 p 1332

Holt L E Duodenal Ulcers in Infancy Am Jour Dis Child December 1913 p 381

Gerdine Linton and Helmholz H F Duodenal Ulcer in Infancy an Infectious Disease Am Jour Dis Child December 1915 p 397

Cackovi M V Arch f klin Chir June 1912 abstr Arch Pediat xxix 630

Lansier Theses de Paris 1908 1909 abstr Brit Jour Dis Child October 1909

Zentralbl f d ges Therap September 1909 abstr Arch Pediat May 1910

Lockwood Pediatrics March 1914

Smithies F Gastric Ulcer Without Food Retention Am Jour Med Sc March 1913 abstr The Journal A M A March 29 1913 p 1025

Sippy B W Gastric and Duodenal Ulcer The Journal A M A May 15 1915 p 1625

Dr Collins H Johnston, Grand Rapids, Mich Last fall Dr Richard Smith did the Strauss operation on a four months old baby, the first case that ever lived in our city The operation is not especially difficult and there was not much shock following it We think Strauss' method is a very good one

Dr J H Hess Chicago In our own hospital we have had very hard luck with gastro-enterostomy, and this led Dr Strauss to undertake his work on the pylorus I think we have had twelve operations to date, of which ten were done by Dr Strauss, and in six of these operations I was present He usually has a physician present to wash out the stomach which accounts for my presence His patients, with one exception are all living The operation itself, when understood I think is a fairly simple one The advantage it has over the Ramstedt operation is questionable in possibly 50 per cent of the cases, in the other 50 per cent it has a real advantage, because he reduces the size of the tumor, and at the same time enlarges the pyloric orifice

Dr H W McClanahan Omaha Much of the discussion applies to another condition In the case I have reported, the peristaltic wave was to me an unusual symptom as the mass was no doubt an inflammatory exudate As soon as the source of irritation was removed, the exudate was absorbed We did not have a roentgenogram made because so long as the little girl was quite well, the father did not see any reason for making it

DEATH RATE IN ACUTE INFECTIONS

A STUDY OF THE MORTALITY IN PHILADELPHIA DURING 1911 1915 FROM MEASLES PERTUSSIS, DIPHTHERIA SCARLET FEVER AND TYPHOID FEVER *

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Through the courtesy of the bureau of health, I have secured a record of the deaths from these acute infections during the past five years, and, while this record may possibly be incomplete, owing to the failure of physicians to recognize or report some cases, yet the study of these statistics will lead to several interesting conclusions

In one or two diseases the conclusions arrived at on comparing the number of deaths from these diseases will differ from the general opinion concerning the mortality from these maladies The most effective method of demonstrating this mortality is to group the fatalities according to the ages at which they occur

In considering the deaths among infants less than 1 year old, we find that pertussis was responsible for the greatest number, this having caused more fatalities than measles, diphtheria or the dreaded scarlet fever Measles shows the next highest mortality, although the number of deaths does not greatly exceed those caused by diphtheria in infants of this age Excepting typhoid fever, which is rare in infants, scarlet fever caused fewer deaths in this period of early infancy than any of the acute infectious diseases in this series

In later infancy, also, scarlet fever caused but few deaths, for the mortality among babies from 1 to 2 years of age was only 10 per cent of the mortality from scarlet fever at all ages, while the actual number of deaths from scarlet fever was less than from any of the other acute infections excepting typhoid fever

During the second year, diphtheria showed a uniformly high mortality, and caused more deaths than either measles, pertussis, typhoid fever or scarlet fever More deaths occurred from measles among infants from 1 to 2 years of age than at any other period of life, a fact which should make us more careful to protect the younger children of the family in which this disease appears Pertussis, while not as fatal after the first year, also showed a high mortality rate — higher, perhaps, than is generally appreciated — and indicates the gravity of this disease, which is too often spoken of as harmless

TABLE 1—DEATHS FROM SCARLET FEVER, MEASLES DIPHTHERIA WHOOPING COUGH AND TYPHOID FEVER AT DIFFERENT AGES

	1911	1912	1913	1914	1915
Under 1 year					
Scarlet fever	7	3	3	4	1
Measles	72	7	49	19	45
Diphtheria	33	26	22	19	24
Whooping cough	41	53	51	135	18
Typhoid fever	0	0	0	0	0
From 1 to 2 years					
Scarlet fever	10	8	13	0	0
Measles	104	19	86	32	81
Diphtheria	93	77	87	72	70
Whooping cough	37	18	25	74	17
Typhoid fever	4	3	2	1	0
From 2 to 5 years					
Scarlet fever	85	55	71	60	8
Measles	96	21	53	20	38
Diphtheria	229	163	152	141	119
Whooping cough	32	22	22	45	10
Typhoid fever	10	7	10	5	2
From 5 to 10 years					
Scarlet fever	39	34	54	34	4
Measles	20	2	7	4	4
Diphtheria	100	79	79	70	68
Whooping cough	5	6	8	10	2
Typhoid fever	14	7	13	8	5
From 10 to 15 years					
Scarlet fever	7	6	9	5	3
Measles	4	0	1	1	0
Diphtheria	10	12	8	9	10
Whooping cough	0	0	0	1	0
Typhoid fever	15	18	17	12	13
From 15 to 20 years					
Scarlet fever	7	1	2	4	2
Measles	4	1	0	0	1
Diphtheria	2	5	1	1	4
Whooping cough	0	1	0	0	0
Typhoid fever	24	29	26	17	19
All ages					
Scarlet fever	179	113	162	129	25
Measles	305	50	199	77	167
Diphtheria	481	388	361	393	188
Whooping cough	116	100	106	266	6
Typhoid fever	223	200	255	194	109

Typhoid fever, which caused no deaths in infants under 1 year of age, showed the lowest mortality of all the acute infections in infants from 1 to 2 years of age, the total number of deaths recorded being but ten The number of deaths from typhoid in infants of this age has steadily decreased for the last five years, having dropped from four in 1911 to none in 1915

From the second to the fifth year, diphtheria caused more deaths than all of the acute infections in this series combined Scarlet fever showed the next highest mortality at this age as compared with the number of deaths caused by the other acute infections in this series, it also caused more deaths among children between 2 and 5 years of age than at any other period of life The total number of deaths from scarlet fever between 2 and 5 years of age does not, however, greatly exceed the mortality from measles at this period, hence we must conclude that measles is a serious disease in children from 2 to 5 years of age.

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* Read before the Section on Diseases of Children at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

Whooping cough caused almost as many deaths in children between 2 and 5 years of age as in those under 2 years of age, therefore it must be regarded as serious during the first five years of life. Typhoid fever presents an ever-increasing mortality as the child grows older, hence we find that the number of deaths in children from 2 to 5 years exceeds the number of deaths in infancy, and each year shows a greater mortality until early adult life, when the greatest number of deaths from typhoid occur.

Between 5 and 10 years of age, diphtheria caused more deaths than all the other acute infections together, so that from the second to the tenth year the mortality from diphtheria is higher than that of all the other acute infections combined. The mortality from scarlet fever in children of this age is less than half that of diphtheria during the same period, but greatly exceeds the mortality from either measles, pertussis or typhoid fever at this age.

Typhoid fever stands third in the mortality lists of children at this age, although this mortality is but slightly higher than in the preceding period. Measles loses its virulence as the child grows older, causing less than 20 per cent. of the number of deaths in children from 5 to 10 years of age as compared with children from 2 to 5 years of age. The mortality from whooping cough also decreases steadily after the fifth year, and in children from 5 to 10 years old is less than one fourth of that in the preceding period (from 2 to 5 years).

In children from 10 to 15 years of age the mortality from these acute infections forms a striking contrast to the mortality from the same diseases in infants under 1 year of age. Whooping cough, which leads as a cause of death before the first year, causes practically no mortality in children over 10 years of age, only one death in five years being recorded in children from 10 to 15 years of age. On the other hand, typhoid fever, which caused no deaths in infants under 1 year of age, shows a higher mortality rate in children between 10 and 15 years than any other of these acute infections.

Deaths due to diphtheria, among children of this age, rank second, and more than equal the number of deaths from scarlet fever, measles, and whooping cough combined. The mortality at this time of life from scarlet fever is very low, and but slightly exceeds that of measles, while the number of deaths from pertussis is practically nil, only one fatality being recorded in five years.

Between the fifteenth and twentieth years there was an appreciable increase in the number of deaths from typhoid fever and but one fatality due to whooping cough. Scarlet fever caused the second highest number of deaths, and diphtheria ranked third, while measles for the five years of this period showed but six deaths. Fatalities from the acute contagious diseases are very few after the fifteenth year, and the mortality from all of them combined does not equal that of typhoid fever in young people of the same age during the five years which these records cover.

I wish particularly to call attention to the number of deaths due to scarlet fever during these five years from 1911 to 1915, inclusive, at the different ages. The total number of deaths from scarlet fever at all ages for the five years was given as 608, but is slightly more, since the records for 1914 and 1915 of fatalities in children between 1 and 2 years of age are incomplete. Of these 608 deaths, 279, or 45 per cent., occurred between the second and fifth years, and the next highest number, 185, or 30 per cent., occurred in children from 5 to 10 years of age. In the first year of infancy, the mortality from scarlet fever, compared with the mortality from scarlet fever at all ages, is 3 per cent.; from the first to the second year it is about 10 per cent.; after the tenth year it drops to 5 per cent., and after the fifteenth year it is only 2.6 per cent.

Comparing this total of 608 deaths from scarlet fever in children of all ages for the five years, 1911 to 1915, inclusive, with the total mortality from all of the other acute infections, at all ages and for the same period of time, we find it less than any one of them, notwithstanding the dread of scarlet fever in the public mind. The deaths from pertussis, which is looked on in an entirely different light, number 655 for all ages during the five years, which is slightly more than from scarlet fever.

According to Dr. Paul Luttinger, of the Bureau of Laboratories, New York City, in pertussis the highest incidence and mortality — 56 per cent. — have been observed among females, the incidence and mortality in males being 44 per cent. This has been attributed to anatomic differences in the construction of the larynx, and is, perhaps, also due to a nervous system which is more susceptible in girls than in boys. The influence of sex is apparent at all ages, and it would appear from our present knowledge that it becomes more evident the older the girls are.

It is difficult to state positively what the true case incidence mortality is. All cases of pertussis are not reported, especially the mild and atypical ones. The law, in Pennsylvania, placards the house, but excludes from school only the children who actually have the disease, allowing the other children to go to school if they are free from symptoms. If this law were better understood by physicians and the laity, more cases would undoubtedly be reported.

The true case mortality, when one includes the mild and atypical cases, is certainly much less than statistics ordinarily indicate.

Diphtheria is in reality the most fatal of the acute infections in this group, since it caused approximately twice as many deaths as any of the others, the total number being 1,741 for all ages during the years 1911 to 1915, inclusive. Typhoid fever caused the next highest number of deaths for all ages in this group, but the fatalities probably do not now rank second, as the mortality dropped during the years 1914 and 1915 to one half of the rate for the three preceding years, and it is only reasonable to assume that it remains at this low figure.

The fact that measles at all ages during this period of five years caused more deaths than either scarlet fever or whooping cough would, perhaps, if more widely known among the laity, tend to prevent the spread of the disease, and do much to break up the popular habit of allowing children to contract measles at the first opportunity "because they are sure to get it sometime, anyway."

For the fuller comprehension of the mortality returns in the acute infections with which this paper deals, it seems advisable to compare the number of deaths with the number of cases of these diseases which were reported, as in Table 2.

During the five years from 1911 to 1915, there were 50,715 cases of measles reported, that is, more than one and a half times as many cases as of pertussis, typhoid fever scarlet fever and diphtheria combined, yet of all these diseases, measles ranked only third in the number of deaths it caused, the mortality, 798, being only 1 1 + per cent

Next in the largest number of cases was diphtheria, 14,720 cases being reported for these five years, with 1,741 deaths, which gives a mortality of about 11 8 per cent The bureau of health, in its annual report for 1914, states that during the last ten years the case death rate of diphtheria has not changed more than 1 per cent, notwithstanding the use of antitoxin, and the bureau of health attributes this to the late recognition of the disease by the parents rather than to a lack of efficient treatment by the medical profession

Scarlet fever was the third most prevalent disease in this series, 11,216 cases being reported, although the number of deaths resulting was less than from any of the other diseases The bureau of health makes the observation that in the years when there were most cases of scarlet fever the mortality was lower, but when the number of cases was fewer, the mortality was higher The total number of deaths, 608 among 11,216 cases reported, gives a mortality rate of 5 4 per cent

There were 9,461 cases of whooping cough reported during these five years, or nearly 2,000 less than the number of scarlet fever cases, yet the number of deaths, 655, was greater, and the mortality rate slightly less than 7 per cent, that is, 1 6 per cent higher than for scarlet fever during this same period

TABLE 2—PERCENTAGE OF DEATHS TO TOTAL NUMBER OF CASES OF MEASLES DIPHTHERIA SCARLET FEVER WHOOPING COUGH AND TYPHOID FEVER FROM 1911-1915 INCLUSIVE

	1911	1912	1913	1914	1915	Number of Cases	Number of Deaths	Percentage of Deaths to Cases
Measles	11 640	2 279	15 611	7 096	14 089	50 715	798	1 1+
Diphtheria	3 792	3 080	2 623	2 610	2 615	14 720	1 741	11 8
Scarlet fever	1 928	2 872	3 400	1 944	1 072	11 216	608	5 4
Whooping cough	1 410	1 369	1 438	4 152	1 092	9 461	655	7 0—
Typhoid fever	1 382	1 514	1 698	793	787	6 174	911	14 5
Totals						92 286	4 713	

The number of cases of typhoid fever reported from 1911 to 1915, inclusive, was 6,174, and the number of deaths 911, giving a mortality rate of over 14 5 per cent, which is higher than that of any of the other acute infections that we have considered In our discussion of the number of deaths from typhoid and the ages at which they occurred, we noted the fact that the number of deaths decreased to one half in the years following 1913, and in summing up the number of cases reported during these five years we find that in 1914 and 1915 only half as many cases were recorded as in 1911, 1912 and 1913 This is largely attributed by the bureau of health to the removal of the dual systems of water supply which existed in several manufacturing establishments in 1913, and the subsequent stopping of intermittent contamination of the city mains The pasteurization of our milk supply has also been undoubtedly an important factor in diminishing the cases of typhoid fever during childhood

Of all the diseases considered in this article, diphtheria caused the most deaths during the five years 1911 to 1915, inclusive, and typhoid fever, measles, pertussis and scarlet fever followed in the order named

With respect to the prevalence of these diseases, measles led by a great majority over all the rest combined, while diphtheria, scarlet fever, whooping cough and typhoid fever followed in the order mentioned The disease with the highest death rate was typhoid fever, while diphtheria, whooping cough, scarlet fever and measles showed the next highest mortality rate in the order given

ABSTRACT OF DISCUSSION

Dr Isaac Abt, Chicago More children fall ill with measles than with scarlet fever—the chart shows 50,715 cases of measles to 11 216 cases of scarlet fever My impression would be, the immunity against measles is less than the immunity against scarlet fever I wonder if it might not be explained in this way Many a child with sore throat may really be infected with the organism of scarlet fever, and yet not show skin reaction Another point in reference to scarlet fever is, according to the geographers epidemics both mild and severe occur Year after year mild epidemics will occur, and then some year a severe epidemic, almost a pan-epidemic, will occur, the number affected is very large, and the mortality is very great The point that I desire to make is that the severity of measles from year to year is uniform that it makes definite symptoms and rarely remains unrecognized, whereas in scarlet fever the symptoms vary from mild to severe, and I am of the impression that scarlet fever occurs more frequently as an unrecognized disease than we commonly suppose Just a word about diphtheria It is a sad commentary not only as to Philadelphia, but as to all of our cities that a disease which can be cured by specific treatment should present such a high mortality It seems to me we are partly responsible and the parents are partly responsible Frequently we are not called to see the case until the disease is far advanced Our responsibility depends on the fact that we do not make diagnoses earlier We are prone to wait for the report from the bacteriologic laboratory, this is time consuming The laboratory report itself may sometimes be fallacious It not infrequently happens that the culture is positive for Klebs-Loffler bacilli on the second or third examination I would make a plea for more careful and accurate clinical diagnoses of diphtheria Our predecessors had definite ideas as to the clinical appearance of the membrane in diphtheria Their diagnostic accumen on this subject was accurate they recognized a diphtheritic membrane when they saw it When the membrane is diffuse, pearly white, or in the later stages, of a cream color, encroaching on the midline of the pharynx or the uvula with beginning stenosis of the larynx or with nasal involvement indicated by a thick albuminous bloody discharge, under such circumstances a real clinician need not wait for a bacteriologic examination The antitoxin should be administered forthwith It seems to me occasionally we lose sight of the clinical signs and depend too much on the laboratory

Dr G G Coplland Toronto, Canada The points that should strike home are the frightful mortality of measles and whooping cough That is not generally appreciated throughout the profession either in Canada or the United States I should like to ask Dr Graham What are the relative proportions of children under 1 year of age who have contracted these diseases that are breast fed, as compared with those artificially fed? I believe the mother s milk protects the infant

Dr Jessie M McGavin, Portland, Ore I think it is especially important to give the antitoxin early, without waiting for the laboratory report In Portland twelve hours elapse before we can get a report from the laboratory In some cases we may have the clinical appearance and yet the laboratory report may be negative I think antitoxin should be given on suspicion of diphtheria In several instances lives were saved by the use of antitoxin when the laboratory reports at first were negative Therefore I give antitoxin on the clinical findings

Dr C F Hoover Cleveland Recently I gathered statistics on the mortality of whooping cough and I found that according to German statistics, it was 25 per cent under 1 year of age I believe statistics given from the California State Health Department recently show a death rate of 2 per cent from whooping cough under 1 year of age One other thing I noticed was that the locality had much to do with the mortality of whooping cough In the higher altitudes it is much more fatal For instance in North Carolina the mortality of whooping cough is greater than of all the other infectious diseases combined

Dr L T Royster Norfolk Va I think delay on the part of the physician to obtain a positive culture undoubtedly is responsible for many deaths and we should urge young medical men to base their diagnoses and beginning of treatment on clinical symptoms Long before I was in the State Department of Health when Dr Dixon organized the department in Philadelphia he declined to permit the use of the laboratory for the diagnosis of diphtheria From 12 to 24 hours and in remote sections 36 hours, elapse before the positive diagnosis is made That very often means life or death to the patient It is much wiser to administer the antitoxin early on a clinical diagnosis rather than to wait for the laboratory report Another cause for the high mortality is the increasing number of various cults, practiced by people not trained in diagnosis, who are pretending to treat people for conditions they know nothing about In Philadelphia at present they are having an extremely mild type of diphtheria with a low death rate A few years ago I think in 1910 we had an importation of a new strain—a type prevalent in southern Europe in the vicinity of Vienna and the Slavish sections of Europe for a number of years Examination of the case records revealed that they were having a death rate in Vienna of 18 per cent, while we were having a death rate of only 7 per cent I think our death rate in hospitals now is only about 2 per cent I have been trying to determine whether the mixed streptococcic serum might be helpful in the treatment of these cases In Vienna they got some improvement in cases treated with this serum Scarlet fever does not yield to public health control at the present time as we would like to have it do The case rate and mortality fluctuates in spite of all our present methods just as the case rate and mortality rate in measles fluctuates In diphtheria with the free use of antitoxin the death rate has steadily declined Although I am much in favor of giving antitoxin and not waiting for laboratory diagnosis I would like to put in a plea for the taking of cultures in every case of sore throat It only takes four or five hours for the culture to grow We can get the culture findings sometimes before we can get our clinical manifestations

Dr C G Kerley New York The subject is a very large one and it is impossible to discuss it very fully The work done by Dr Graham is very complete and it will be a great advantage to our knowledge of the subject I feel it would have been better if those between 15 and 20 years of age had been left out After the fifteenth year, the individual is not a child and hardly should be included in statistics on children The mortality from diphtheria is high as well as that of typhoid The same trouble evidently exists in Philadelphia as in New York, namely the impossibility of seeing cases of diphtheria early The child not being particularly ill at the onset of the disease renders the disease very dangerous We are called to see our tonsillitis cases much sooner than we see those ill with diphtheria for the reason that in tonsillitis there is the high fever prostration and symptoms of urgent illness whereas in early diphtheria the child appears only slightly ill and he is often three or four or five days treated by home methods before the physician is called The fatal issue among the poorer people is not at all unusual in children who have been in bed but a day or two

Dr F D Barker, Dayton Ohio I would like to emphasize one practical point referred to by Dr Royster the distressing persistence of scarlet fever in epidemics In April more than 40 per cent of cases of scarlet fever in Dayton were in families in which the scarlet fever was persisting or recurring A careful study showed that they were not persons who had become infected at the same time as the first patient who had recovered The source of infection evidently had been overlooked The original patients were well and not included in these statistics but the source of infection was persistent

Dr E E Graham Philadelphia I tried to emphasize the importance of treating diphtheria from a clinical rather than from a laboratory standpoint Of course we make our diagnosis in either laboratory or clinical study but if the case were treated from a clinical standpoint rather than from a laboratory standpoint the mortality would be much reduced In regard to whether pertussis in the first year occurs more largely in the breast fed or bottle fed I have no records I should, however, suppose that the breast-fed child being more robust and better able to resist infection such a record would show fewer deaths in these than in bottle fed To show just what relation they bore to childhood as well as to early adult life is the reason I included the patients over 15 The mortality of typhoid I do not believe is as high as that record would indicate Mild cases are probably overlooked in children

FRACTIONAL DETERMINATION OF GASTRIC SECRETIONS*

ERNEST C FISHBAUGH AM MD

LOS ANGELES

The fractional determination of gastric digestion had its inception among students of stomach physiology, and as early as 1895, Schule[1] presented curves of gastric secretion These were formulated by plotting the amount of acid, free, combined and total, found on the titration of gastric juice withdrawn at fifteen minute intervals during the cycle of digestion From his observations on healthy persons he arrived at the following conclusions 1 "Values of the free as well as the combined hydrochloric acid and of the total acidity differed considerably in the same individual and in different people, too, without demonstrable cause" 2 "Height of digestion occurs sixty minutes after the Ewald test breakfast, varying in individual cases from forty-five to seventy-five minutes"

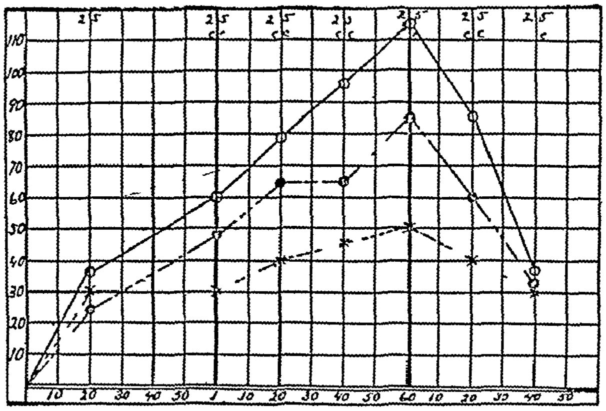

Chart 1—Chart of Mr R L S In this and the following charts unless otherwise noted the hollow dots and solid line indicate total acidity solid dots and broken line free hydrochloric acid crosses and line of dashes pepsin 10 = 1 mm

Hayem[2] later did splendid work by removing specimens at intervals with the stomach tube The procedure of frequent introduction of the stomach tube naturally caused a difficulty in securing subjects

The excellent experiments of Pawlow[3] have for a number of years stood almost unquestioned as representing clear evidence of the exact nature of gastric secretion These experiments were performed on animals, chiefly dogs, and the digestive cycle observed has been almost unqualifiedly applied to man This application does not seem justifiable since the functions recorded on a traumatized stomach must be more or less perverted

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* Read before the Southern California Medical Society May 3 1916 Pomona Calif

[1] Schule Ztschr f klin Med 1895 xxvIII

[2] Hayem Maladies de la tube digestive Brouardel and Gilbert 1905

[3] Pawlow The Work of the Digestive Glands 1910

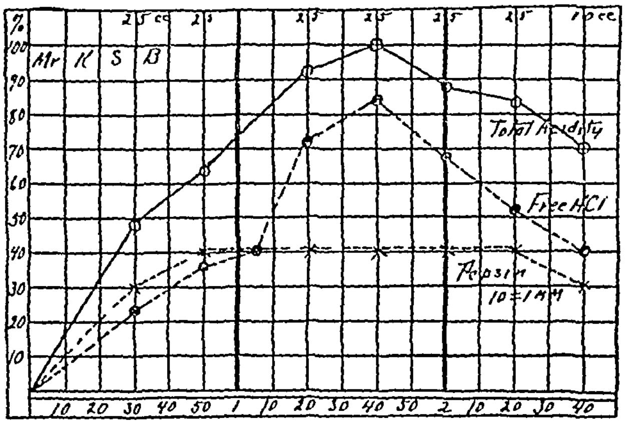

Chart 2 —Mr K S B

Even the well known observations on the famous case of Alexis St Martin, as regards the cycle of digestion and gastric secretions, cannot be directly applied to the function of the nontraumatized human stomach

Bourget[4] was not the first clinician to insist that the untraumatized human stomach must be studied directly and in a normal condition and that the universal application of animal experimentation to man must be modified, otherwise the physiology of the human stomach would not progress

Until the last couple of years, little advance had been made in the study of the cycle of digestion, and this was chiefly due to the fact that there was no simple and practical method of obtaining interval specimens of a test meal except by the repeated use of the stomach tube This, of course, was most objectionable to the patients Rehfuss,[5] realizing the inadequacy of the ordinary stomach tubes, developed a tube of his own and has since presented many excellent studies in gastric physiology and pathology The chief advantage of the tube which he devised lay in the fact that the metal tip contained slitlike openings, each of which was equal in width to the diameter of the small rubber tube The increased size of these openings made aspiration somewhat easier than when the tip contained only small perforations The Einhorn duodenal tube and many others of a similar type can be successfully used in the same manner, but with less ease than the Rehfuss tube

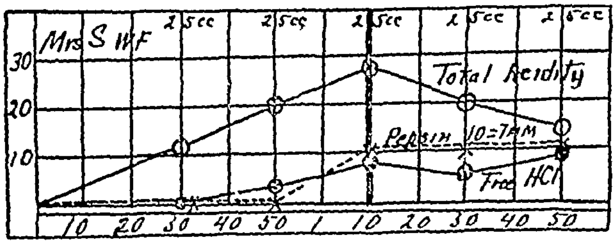

Chart 3 —Mrs S W F

Rehfuss, Bergeim and Hawk[6] found in healthy medical students that "each individual exhibits a certain tendency in the elaboration of his secretion, and this tendency is the same be the stimulus an Ewald meal, water or meat" They found that the acidity figures for the various stimuli were approximately the same They found, furthermore, that even though there was a variation in the figures, the type of curve persisted in that individual

The technic followed in this study has been, in the main, that of Rehfuss,[7] with variations in details only Forty gm of water crackers with 10 ounces of water, about 2 ounces of which were reserved to be swallowed with the tube, were given as a test breakfast Usually about ten minutes were required for the ingestion of the crackers and water Immediately the tube was swallowed with the remainder of the water The excess of saliva which formed rapidly during the first few minutes was expectorated If the saliva was swallowed, it interfered materially with the ease of the aspirations After the first few minutes the patient suffered no inconvenience with the tube in his mouth The patient was placed at ease—either sitting or lying down, and urged to read or otherwise divert his attention At twenty minute intervals, from 15 to 25 c c of the stomach contents were withdrawn until the stomach was empty The aspirations were made by gentle suction When aspiration was not possible by gentle suction, it indicated that the tube was occluded, openings of the metal tip were covered by folds of mucous membrane, or the tip was above the fluid level in the stomach These difficulties were as a rule overcome easily by forcing a little air into the tube, by varying the amount of tube swallowed or by changing the position of the patient The stomach was considered empty when no more fluid could be aspirated with the patient placed in the dorsal, right and left lateral and often the knee-chest positions

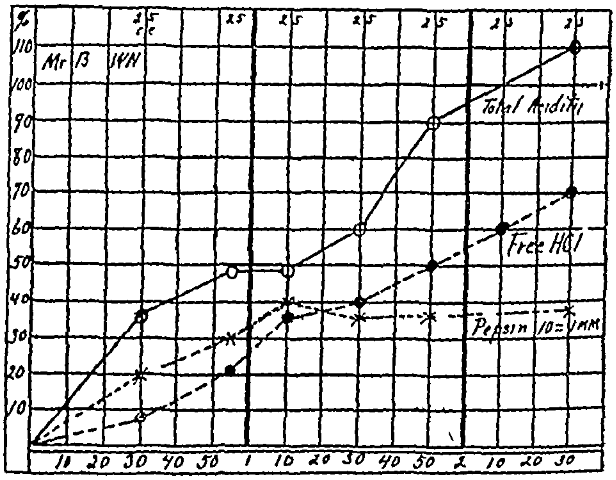

Chart 4 —Mr B W N

The material from each aspiration was filtered and measured off by means of a graduated pipet Phenolphthalein was used as an indicator in determination of the total acidity, and dimethylaminoazobenzene for the free hydrochloric acid, and each titrated with tenth normal sodium hydroxid The pepsin was determined by adding to an undiluted portion of each filtrate a Mette tube, and measuring at the end of twenty-four hours the amount of digestion, by means of a millimeter rule and a magnifying lens

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[4] Bourget Maladies de l estomac Ed 1 1913 p 3

[5] Rehfuss Am Jour Med Sc June 1914 p 648

[6] Rehfuss, M E Bergeim Olaf and Hawk P B Gastro Intestinal Studies, I The Question of the Residium Found in the Empty Stomach The Journal A M A, July 4 1914 p 11

[7] Rehfuss M E Bergeim Olaf, and Hawk P B Gastro-Intestinal Studies II The Fractional Study of Gastric Digestion with a Description of Normal and Pathologic Curves The Journal A M A Sept 12 1914, p 909

In reviewing the fractional studies of sixty-five gastric cases, the value of the interval method of stomach analysis becomes evident The ordinary one hour examination evidences a single moment in an ever changing cycle of stomach activity The one hour examination not only affords insufficient information but also gives data which frequently are misleading or entirely incorrect Irrespective of symptomatology and physical diagnosis, it was noted that aside from emphasizing the value of the method, the curves of stomach secretions fell into three general classes

1 Stomach secretions whose curves fall toward the end of gastric digestion

2 Stomach secretions whose curves rise to the end of gastric digestion

3 Stomach secretions absent or delayed

Group 1 Stomach Secretions Whose Curves Fall Toward the End of Gastric Digestion Of the sixty-five cases, twenty-six exhibited a fall in the secretory curves toward the end of gastric digestion

Chart 1 represents this sort of curve The secretions began early in the cycle, and at the end of one hour there was a free hydrochloric acidity percentage of 48 and a pepsin digestion which had gradually increased to 3 mm , but the acidity as well as the enzyme continued to rise until at the end of two hours there was a free hydrochloric acidity of 85 and a pepsin digestion of 5 mm During the next forty minutes there was a gradual fall in acidity and enzyme In this case the enzyme digestion followed the acidity curve very closely

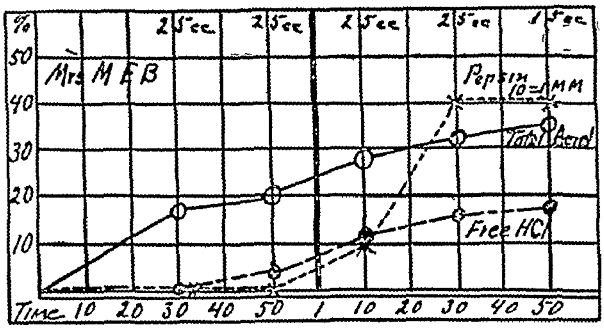

Chart 5 —Mrs M E B

Chart 2 shows a similar type of curve, the highest acidity figures being reached at the end of one hour and forty minutes It differs from Chart 1 in that the pepsin does not follow the acidity curve At the end of fifty minutes the pepsin digestion was 4 mm and remained at that level, although in the next fifty minutes the free as well as the total acidity more than doubled in percentage

In this group of cases the height of acidity varied from the high figures in the foregoing curves to the very low acidity and enzyme curves shown in Chart 3 This type of curve is represented by all graduations from the hypacidity to the hyperacidity, and from the hyposecretion to the hypersecretion In only four cases of the twenty-six was the free hydrochloric acid at its height within one hour after ingestion of the test breakfast In the remaining twenty-two cases the height of the free hydrochloric acid curve was reached at varying lengths of time up to two hours and forty minutes after the breakfast On an average of the twenty-six cases the height of the free acidity curve was reached one hour and thirty-one minutes after the meal, thereby showing that the height of secretion is missed by the one hour examination in a very high percentage of the cases In this group the highest acidity percentage of free hydrochloric acid varied from 8 to 88, with an average of 52 2

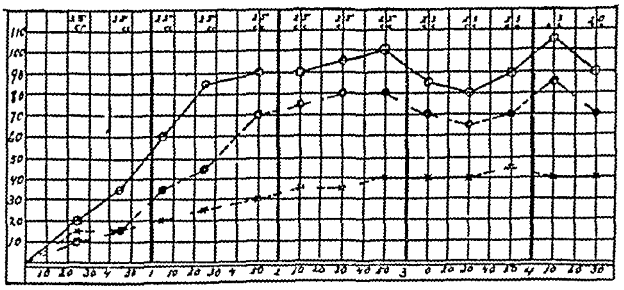

Chart 6 —Mrs A G A Crosses and line of dashes indicate pepsin digestion 10 = 1

A question naturally arising is, Why a fall in the secretory curve toward the end of gastric digestion? It would seem that two factors must be considered preeminently

1 A portion of the acidity may be neutralized by the meal itself A quantity of water crackers were well mixed with a standard solution of hydrochloric acid, tenth normal, and allowed to stand at room temperature for varying lengths of time when portions were filtered and the filtrate titrated against tenth normal sodium hydroxid It was thereby found that this factor could be eliminated as a cause of the fall in the curve toward the end of digestion in the stomach

2 During digestion the secretory activity in enzymes and acid is dependent on a stimulus, psychic, chemical or reflex, and as the stimulus disappears there would naturally follow a fall in the secretions In this group of cases it would appear that such a condition was present and that toward the end of gastric digestion the glands of the stomach continued to secrete, but produced a juice decreasingly poor in enzyme and acid constituents, thereby diluting the once concentrated solution and producing a fall in the curves

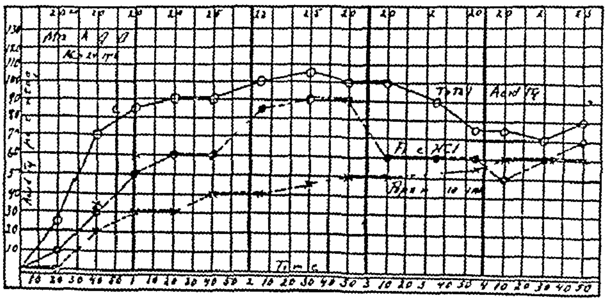

Chart 7 —Mrs A G A March 24 1916

Group 2 Stomach Secretions Whose Curves Rise to the End of Gastric Digestion Of the sixty-five cases, twenty-four fell into a class where the acidity figures continued to rise until the stomach was empty Chart 4 represents this type of curves with rather high acidity figures At the end of one hour there was a free hydrochloric acidity of only 36 per cent , but by the time the stomach was empty the percentage of free hydrochloric acid had doubled and the total acidity had more than doubled The pepsin reached its highest point at the end of one hour and ten minutes

Chart 5 shows a similar type of curve, but with low acidity figures The ferment pepsin did not appear until after the free hydrochloric acid

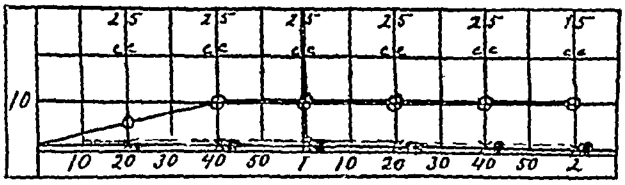

Chart 8 —Mr A C E

In this class of cases, as in Group 1, all gradations of secretion were noted from the hyposecretion to the hypersecretion and from the hypacidity to the hyperacidity The emptying time varied from one hour to four hours and fifty minutes, with an average of two hours and seven minutes The highest free hydrochloric acid figures varied from 16 to 90, with an average of 56 acidity per cent The highest point in the free hydrochloric acid curve was reached at periods varying from sixty minutes to four hours and fifteen minutes, with an average time of one hour and fifty-one minutes for the twenty-four cases In only two cases were the highest acidity figures found at the end of the first hour So in only two instances would the one hour examination have given an accurate information regarding the highest acidity

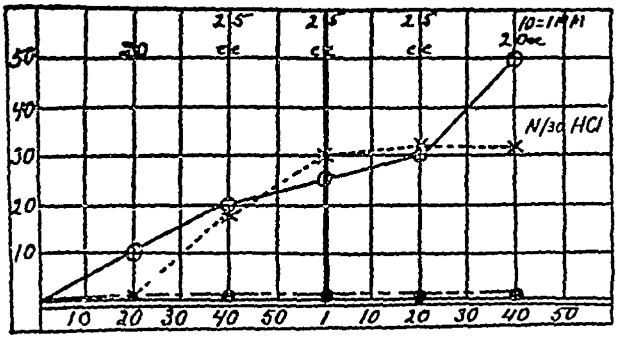

Chart 9 —Mrs C O H

Chart 6 is a case of continued secretion presenting a double curve At the end of the first hour there was a free hydrochloric acid of only 35 acidity per cent , but it continued to rise, until at the end of two hours and thirty minutes it had reached 80 Then there occurred a gradual fall to 65 at the three hour and thirty minute interval, after which there was a rise to 85 in the following forty-five minutes In the next twenty minutes there was a fall to 70 This case was examined one week later, and showed (Chart 7) a very similar type of curve It is the only instance of a double curve in the sixty-five cases, and presents a most instructive hypersecretion and hyperacidity The insufficiency of a single specimen at the end of one hour in this case is obvious

In a class of cases in which there is a gradual rise of the curves to the end of gastric digestion, it would appear that there was a continued secretion of a juice which, at least, did not decrease in its acidity content but rather increased, thereby producing a fluid increasingly rich in enzyme and acid content

Which type of curve is normal? From this review and also from Rehfuss, Bergeim and Hawk's[7] study on healthy medical students, there seems to be no type of curve into which all healthy and symptomless cases would fall Each individual has his type of curve, and there is no means of knowing the type until he has been examined by the fractional method

Group 3 Stomach Secretions Absent or Delayed. Before the introduction of the fractional method of gastric study there was perhaps no more frequent error in stomach diagnosis than that of achylia gastrica It will be shown that the removal of the ordinary test breakfast at the end of one hour affords insufficient data for such a diagnosis By the interval method of examination it was found that this group of cases fell into three distinct classes

1 Absence of acid and enzymes
2 Absence of acid, with enzymes present
3 Enzymes and acid appearing late in the cycle of digestion

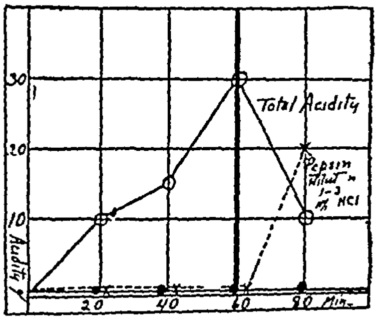

Chart 10 —Mrs S C E.

The absence of acid and enzymes is a relatively unusual finding, and in only two cases out of a total of fifteen was this condition conclusive Chart 8 represents such a case This is true achylia gastrica In addition to an absence of acid and enzymes, there was also a rapid emptying time

The absence of acid during the entire cycle of digestion with a secretion of enzymes, pepsin and rennin is the more common condition The enzymes may be present in normal or in decreased amount

Chart 9 shows the curve of total acidity and pepsin in a case of this type The enzyme may appear in the early part of the cycle or not until late, as in Chart 10 It is very evident that the case represented in Chart 10 would have been classed as an absence of both acid and enzymes at the end of one hour

The third class is that in which the acid and enzymes appear late in the cycle of digestion Three cases have been encountered in this series Chart 11 presents the curve of a case in which the secretions were delayed for one hour and ten minutes In the other two cases the free acid as well as the enzymes did not appear until after the first hour In this type of cases the gastric glands are functionally active but their activity is much delayed This marked retardation of secretory activity represents the true "chemical" stomach

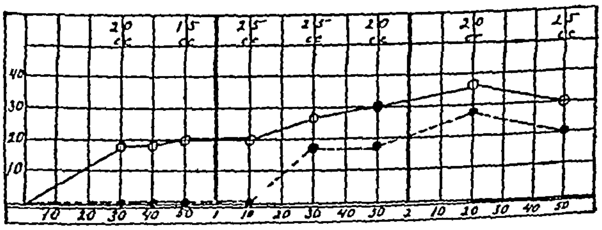

Chart 11 —Mrs D A P

secretion, the "psychic" secretion being absent. It is obvious that the one hour examination would have placed this class of cases as the true achylias.

SUMMARY

It has been the aim in this review to avoid a consideration of the diagnostic, prognostic and therapeutic possibilities suggested by the various curves presented, but simply to point out, as others have done, the value of interval examination of gastric secretions, and furthermore to emphasize the valuelessness of the ordinary one hour examination. The association of the various types of curves with symptomatology and therapeutic management have been purposely reserved until more extensive clinical data are at hand.

It would seem from an analysis of the fractional study of stomach secretions in this group of cases, that the following conclusions are justifiable:

1. One hour stomach examinations afford insufficient and often misleading information concerning the acidity and enzyme secretion. It gives no evidence of the secretory curve.
2. The fractional method of stomach examination follows the entire cycle of digestion, and supplies reliable information concerning the type of secretory curve, the degree of acidity, the ferment content and an accurate estimation of the emptying time.
3. By fraction study, stomach secretions fall into three groups: (*a*) stomach secretions whose curves fall toward the end of gastric digestion; (*b*) stomach secretions whose curves rise to the end of gastric digestion, and (*c*) stomach secretions delayed or absent.

412 West Sixth Street.

RADICAL OPERATIONS FOR THE CURE OF CANCER OF THE SECOND HALF OF THE LARGE INTESTINE, NOT INCLUDING THE RECTUM *

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The early period of abdominal surgery was concerned chiefly with the question of mortality. With modern methods, it had to be definitely shown that, other things being equal, the opening of the abdominal cavity was comparatively safe. Under the able leadership of Tait in England, who might be called the father of modern abdominal surgery, and Price in America, the mortality was reduced to a point well under 5 per cent., and today standardized and accepted technic has reduced it to about 2 or 3 per cent.

However, the average mortality is somewhat on the increase, owing to the fact, first, that many operations in which there was practically little or no danger, and the results of which served to dilute, so to speak, the mortality of the more necessary operations, are no longer considered advisable, and, second, that modern methods have made possible a successful attack on conditions which were previously considered inoperable and which contributed to the higher death rate.

From the early period in which everything was to be proved by the lowness of the mortality, we learned certain facts, among them, that even by the most careful methods of preoperative examination there is a percentage of error in accurate pathologic diagnosis not far from 10 per cent. This taught us that except in the presence of acute infections or other contraindications, a careful exploration of the abdominal cavity is necessary before operating. It is to be regretted that an accurate pathologic diagnosis cannot always be made; but if we succeed in making a surgical diagnosis and cure the patient, we have, at least, accomplished the main purpose of the operation. It is immaterial to the patient, provided he gets relief, whether that relief comes through the removal of the appendix, gallstones, or an ulcer of the stomach. Moreover, since a diagnosis brought up to the minute by exploration may reveal more than one lesion that can be relieved by a single operation, such exploration should be made unless there are definite contraindications. The patient who has had his appendix removed without an exploration and has been left with a duodenal ulcer or gallstones, the real cause of his symptoms, to be taken care of at a second operation after months of suffering, has justifiable cause for dissatisfaction.

This brings up another important consideration—the disability resulting from the operation itself, which must be reduced to a minimum. If there is more than one pathologic condition which only operation will relieve, the disability will be greatly reduced if the two operations can be done in one stage. If the operations are performed at different times, the multiple risk may be as great at least as that of a single operation. While mortality statistics are reduced one half when the number of operations is doubled, such an apparent reduction, obtained by doubling the number of operations performed on each patient, is misleading, and results only in prolonged disability. The two-stage operation, however, has great merit in a small group of cases in which the desperate condition of the patient justifies any maneuvers that will reduce the operative risk, and in which the question of disability becomes a secondary consideration.

In malignant disease, still another problem, which is worthy of our most earnest attention and is naturally associated with the question of mortality, is operability. Operability today is perhaps the most important consideration in connection with malignant disease. Low operability gives low mortality and high percentage of cures. An examination of the records of resections for malignant disease of the large intestine in our clinic definitely shows that when the disease was confined to the intestine and was movable, the mortality was well under 5 per cent., and the percentage of five-year cures above 60 per cent. Taken by itself, this certainly was a remarkable showing. When the operability was brought up to 62 per cent., the mortality trebled and the percentage of permanent cures markedly decreased, a most unfortunate showing; but when studied in the light of the entire group of cases, we had the paradox that more than twice the number of patients in each hundred were actually cured. This illustrates the fallibility of the view that operative mortality percentages prove correct any theories based on such statistics, and leads others to the trite remark that "Nothing lies like statistics." Statistical percentages of mortality and cure can be studied properly only in their relation to operability. In other words, the greater the number of patients operated on to the hundred examined, the greater the mortality, because it brings in a group of advanced cases in which the risk of operation is great and the percentage of cures small. On the other hand, it increases by a definite and incontrovertible percentage the number of persons who have actually been cured

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916.

From Jan 1, 1898, to Dec 31, 1915, 419 resections of the large intestine have been made in our clinic, with an average mortality of 14 5 per cent In 184 of these cases, the left half of the colon, including the splenic flexure and not including the rectum, was resected, with an average mortality of 17+ per cent In resections of the right half of the colon the mortality was 12 5 per cent The difference of 5 5 per cent between the two mortality percentages was due to the less septic character of the liquid contents of the right half of the colon as compared with the more solid contents of the left half of the colon, and the greater safety of ileocolostomy as compared with the methods of union following resections of the left colon One hundred and thirty-one of the resections of the left half of the colon were for malignant disease Of each hundred patients presenting themselves, sixty-two were subjected to resection In the remaining thirty-eight the disease was considered inoperable at the time of examination, or proved to be inoperable on abdominal exploration It is our earnest purpose to increase the operability, first, by endeavoring to secure the cases at an earlier date, and, second, by extending the limits of operability Increasing experience shows that some of the cases, which at the time of examination we had considered inoperable, may be resected by modern methods with a prospect of permanent cure In spite of the fact that this extension will add to the list many advanced cases, we should be able notably to reduce the death rate in the whole number by improvements in technic, and at the same time make the operation more radical

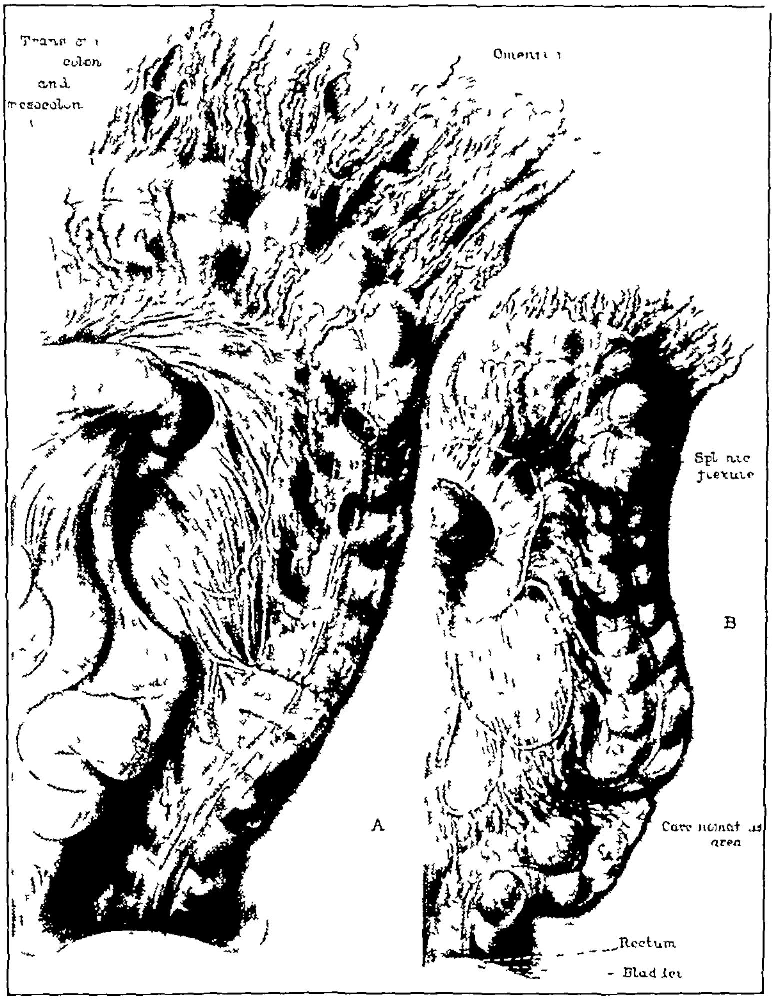

Fig 1 —*A* end to end tube resection completed *B* carcinoma of the pelvic sigmoid Dotted line indicates the points of resection

TECHNICAL CONSIDERATIONS

1 An ample working incision should be made in the middle of the left rectus muscle It is best to ligate the deep epigastric vessel above and below, and to excise the intervening section

2 A thorough exploration of the involved colon and abdominal cavity, especially of the liver and peritoneal tissues, should be made in order to discover possible metastasis or the direct involvement of other organs which would make a cure impossible

3 *Mobilization*—The most important consideration in resecting the large intestine is the detachment of the outer and posterior attachments of the colon so that it may be brought well out of the wound If we remember that the large intestine has its origin on the left side of the body close to the midline and that it reaches its location around the outer circumference of the abdominal cavity comparatively late, we can readily understand that its outer attachments are in the general nature of holding bands and that they contain no structures of great importance The splenic flexure is retained in position by the splenocolic ligament, which is derived from the omentum and contains a blood vessel which must be tied The outer leaf of the mesentery of the pelvic colon in the female is closely associated with the left broad ligament, and here again are vessels which must be ligated

Posteriorly, the left ureter must always be identified and separated As a rule, in the operable cases it is possible to detach the ureter safely from the growth, but in several instances we have found it necessary to resect a portion of it, tying the ends with catgut, when it was involved in a situation in which it was impossible to reimplant it in the bladder or suture the ends together This permanent ureteral obstruction has not been followed by any unfavorable results, and in no case has it been necessary to remove the kidney at a later date because of it On one occasion close attachments to the left kidney in an otherwise operable case made it necessary to remove the kidney with the growth The patient has now remained well more than three years The right ureter should be identified, but will seldom be found involved

Attachments to the abdominal wall from direct extension of the growth are not infrequent, and we have not hesitated to remove large sections of the involved tissues when necessary These extensive dissections did not add greatly to the mortality of the operation, and some of the cases in which the growth was so fixed as to be apparently inoperable have been cured

It has been found wise, therefore, to loosen the colon from its outer attachments and remove all of the involved tissues with it in a single piece Among the most difficult dissections of this kind are those in which a previous exploration has been made, followed by a fecal fistula, or in which a colostomy has been performed for the relief of the obstruction Even in these complicated cases, however, all the structures of the abdominal wall on the outer side can be freely dissected if necessary, turning the colon and involved tissue toward the midline The bleeding vessels are caught and tied, and a large gauze pack placed in the cavity, which is left undisturbed until the operation is completed to check oozing from the cut surfaces

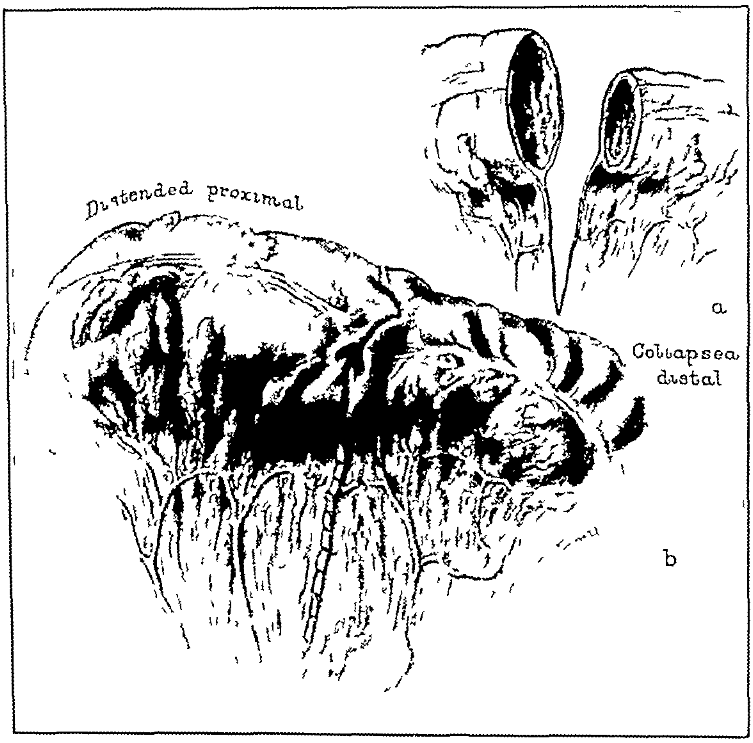

Fig 2 —a C H Mayo method of widening the distal collapsed bowel to meet the distended proximal bowel b operation completed

When the colon containing the growth is drawn well out of the abdomen, it can be lifted up to the light and the blood vessels readily identified and tied The lymphatic supply of this region is scanty and herein lies the success of these operations In 60 per cent of the fatal cases, according to Butlin, the patients die from obstruction, local infection, etc, before the glands are involved with cancer Frequently, after extensive dissections, we have examined enlarged glands microscopically, and have found that the adenopathy was the result of sepsis and not of carcinoma In a number of instances I have resected the colon in patients who had been previously explored and who had been refused radical operation on account of glandular involvement supposed to be carcinomatous On removal, no cancer was found in the glands

Segregation of the Involved Organs —Having briefly outlined the character of the task of mobilizing the colon from the outer side, we must take into account the fact that the small intestine frequently becomes adherent to the carcinomatous mass on the inner side and there is direct extension of the disease As a rule, the extension is to the periphery of the small intestine, although at times it involves the lateral wall of the mesentery This complication, which we have seen often, by no means renders the condition inoperable, as is so frequently thought We have several patients who have remained well beyond the five-year limit, in whom from one to three separated loops of small intestine had been resected with end-to-end union, and finally the diseased portion of the colon removed with the attached loops of small intestine Experience with such resections of the small intestine has demonstrated the fact that almost any reasonable method of anastomosis will be effective — lateral or end-to-end The general tendency is to take up too much time with these resections and suture more than is either necessary or desirable Of late we have been more inclined to the end-to-end union with a continuous through-and-through chromic catgut suture, protected by a few interrupted silk sutures in the musculoperitoneal coats

The ends of the small intestine which are left attached to the colonic tumor are crushed, ligated, and sterilized thoroughly with the cautery to prevent soiling In low sigmoid tumors, the bladder is not infrequently involved, and on a number of occasions we have removed a considerable portion of its posterior wall As a rule, only the peritoneal and muscular walls of the bladder are involved, and the mucous membrane is left intact By the use of chromic catgut sutures protected by a few interrupted sutures of the same character, union seems to be very certain I have never known a bladder so treated to leak following the operation

Involvement of the ovaries and tubes and uterus is of small consequence We have usually made an incision through the peritoneum in front of the cervix, cut the cervix directly across, grasping the uterine vessels and dissecting the broad ligament from below upward on each side, and removed with the uterus the ovaries and tubes, so that the whole mass remains attached to the sigmoid tumor This is a safe procedure and leaves the adherent uterus to block the point in the bowel weakened by penetration of the tumor, which might otherwise be opened up and flood the operative field with septic contents The ovaries should always be removed if any involvement is suspected, as they are the most frequent seat of cancer grafting of any organs in the abdominal cavity, probably because each ovulation opens up an unprotected surface for cell grafting

The appendix is rather frequently adherent to the tumor mass when the cancer lies low, and occasionally the cecum is attached Removal of the appendix and the necessary amount of the cecum can be rapidly accomplished and does not seem to add greatly to the risk

Excision of the Involved Colon and Restoration of Colonic Function—In the manner briefly outlined, the colon and all the involved tissue are delivered outside the abdominal cavity The further management will depend on how thoroughly we have been able to prepare the patients and whether or not there is obstruction It has been shown that from one fourth to one third of the stool bulk is due to bacterial growth and that dry stool contains dormant bacteria, while liquid stools have most active organisms It is undesirable that any attempt be made to evacuate the bowels by means of physic within twenty-four hours before the operation This should be done at least forty-eight hours before, as liquid contents are difficult to control mechanically, as well as markedly infectious

Primary resection in the presence of even moderate obstruction is seldom permissible It is necessary in these cases, first, to relieve the obstruction, as a soggy intestine, edematous and septic, is extremely liable to suture perforation We must content ourselves either with a cecostomy under local anesthesia, which is best if the obstruction is urgent, a colostomy made as close as possible to the growth so that it can be excised when the resection is performed later, or, still better in the large majority of instances, the two-stage operation of Mikulicz and Bruns (Figs 1 and 2)

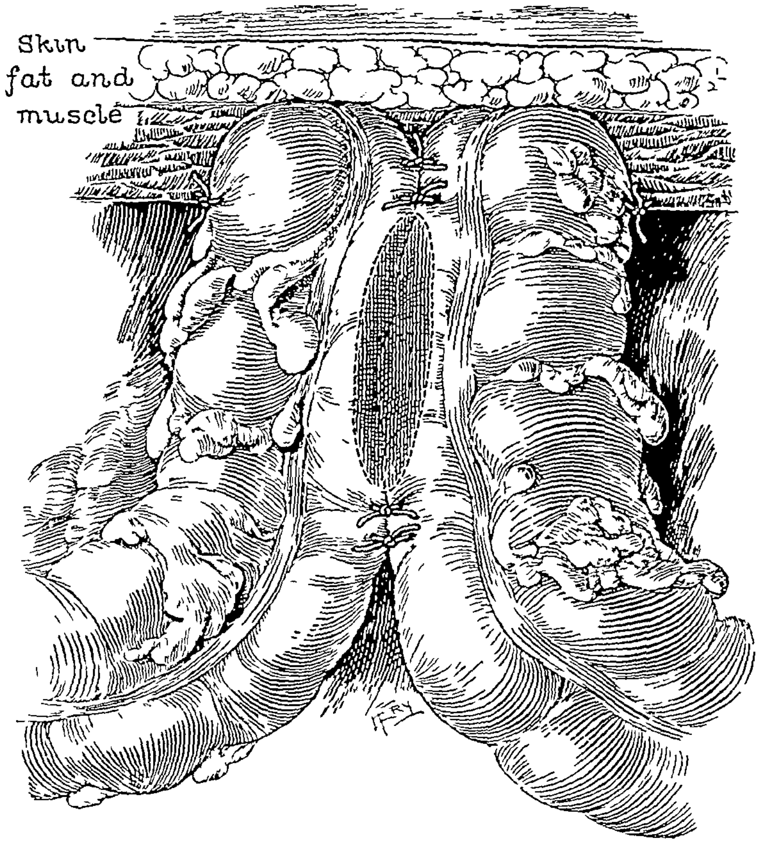

Fig 3—Bloodgood method of anastomosis of the large intestine The bowel is attached to the incision in such a way that should leakage occur it would readily find its way to the surface

Many patients will come with obstruction of the bowels and in extremely poor condition for operation At times by lavage of the stomach and maintaining the fluids of the body if necessary by subcutaneous salines, such patients can be carried over the acute attack and subjected to operation later after flatus and bowel movement has been secured

When conditions are favorable for a primary resection with an end-to-end anastomosis, the use of the sigmoid tube (Fig 1 *a*), that is, a rubber tube of considerable caliber, which, as advised by Balfour, is passed from the anus completely through the anastomosed area and some inches above, will reduce the death rate to a very great extent We frequently pass these tubes well up into the splenic flexure A large-sized, rather firm stomach tube with a few lateral eyes near the tip will answer the purpose (Fig 1 *b*)

The sutured area should be attached to the peritoneum if there is any doubt whatever as to the integrity of the suture line, or it may be brought completely through the peritoneum, the latter being attached behind it so that it lies within full view and any leakage will be to the surface If the colon is too short for this maneuver, the sutured area may be suspended on a roll of rubber tissue so that it will develop adhesions and the suture line will become extraperitoneal

In applying the end-to-end suture, there is an unconscious tendency to draw the sutures tight, so as to narrow the lumen This can be easily overcome, as suggested by C H Mayo (Fig 2), by making an incision along the free surface of the colon opposite the mesenteric attachments three-fourths inch deep on each side, and trimming off the corners When the suture is complete, the lumen is widened to that extent at the point of anastomosis The Bloodgood method of colonic anastomosis also serves an excellent purpose A drawing of this method is here shown and is so plain that it needs no further description (Fig 3) The tube method of end-to-end anastomosis described by Balfour is especially valuable following resections of low sigmoid growths

About twelve years ago, C H Mayo introduced into the clinic the Mikulicz - Bruns method (Fig 4) of resecting the second half of the colon and this method has probably done more to extend operability and reduce mortality than any other factor It consists in loosening up the diseased portion of the colon, as already described separating the mesentery, and lifting the growth and glands with the involved tissues entirely out of the abdomen The sound colon for several inches above and below is well cleared and the two arms sutured, the tumor and a sufficient quantity of intestine being left completely outside the abdominal cavity The peritoneum is sutured around the base of the extruded mass so that it becomes entirely extraperitoneal and is allowed to heal into the incision In from three to seven days the mass is cut off, the two ends of the intestine being left like a double-barreled shotgun in the wound If there is obstruction, the method of Paul is advisable, that is, after the sigmoid is fixed firmly in the wound to prevent retraction within the abdomen during sudden strain (coughing, etc), the tumor mass is cut away, leaving the ends of the sigmoid projecting an inch or more A rubber tube, 1 inch in diameter, is fastened into the proximal bowel end to carry the obstructed contents into a container In many cases in which the circulation in the extruded loop is cut off, it is good practice to cut the tumor away at once after tying and sterilizing the ends of the bowel, as advised by Peck This prevents soiling for from twenty-four to forty-eight hours until the wound is protected, and if the patient has been well prepared the temporary obstruction is borne without difficulty

At a second stage, about ten or twelve days after the primary operation, during which time the bowels have been thoroughly evacuated, one blade of a 4-inch clamp is placed in each opening of the colon and the clamp closed to the first notch Each day it is tightened until, at the end of about six days, it has cut its way through, converting the outer end of the double lumen of the intestine into a single cavity A few days later the resulting colostomy can be closed by a simple extraperitoneal operation It might be thought that with better technic a larger percentage of these cases could be subjected to immediate resection, but it is not technical faults in suturing that lead to disaster If leakage occurs, it is usually in the second week, owing to perforations in the suture line after the sutures have fulfilled their mission We have found chromic catgut for gastro-intestinal suture less liable to this complication than silk or linen

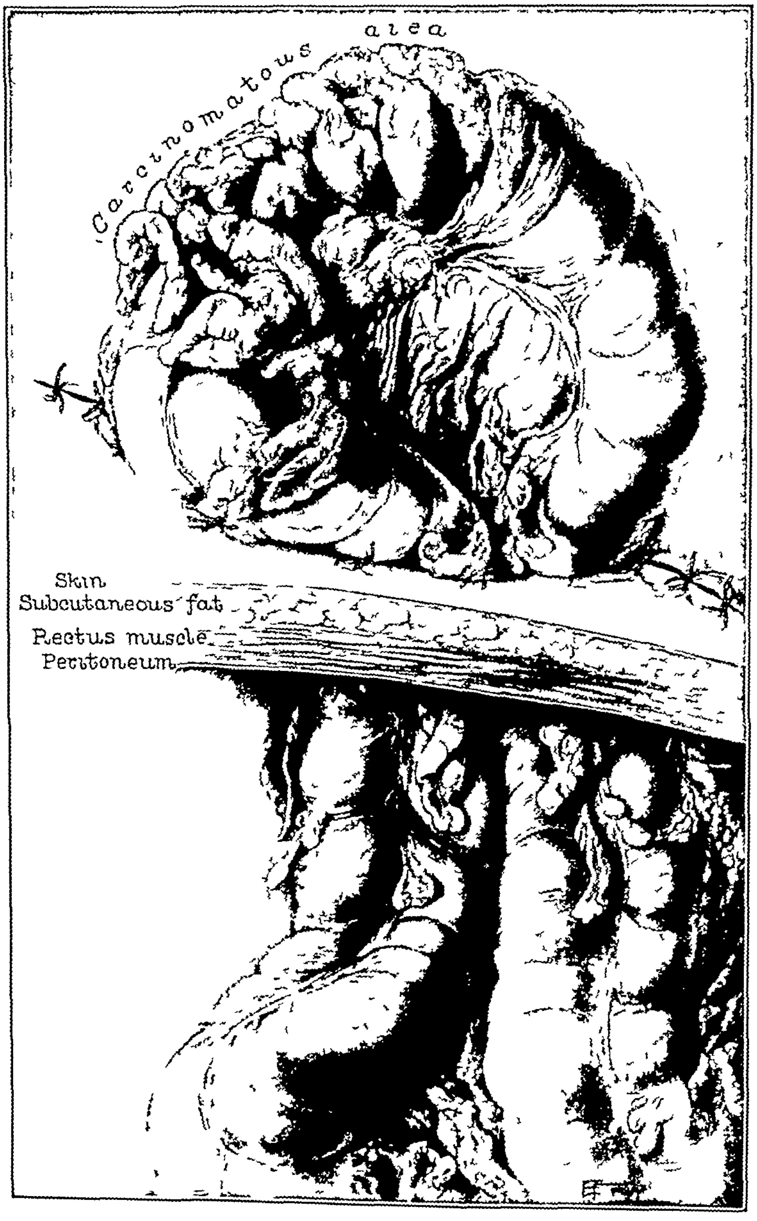

Fig 4—First stage of Mikulicz operation completed The tumor involved part of bowel fat and mesentery being drawn outside the abdominal wall where it will remain until it heals in It will then be cut away and the partition between the limbs of the bowel as sutured together will be cut out with forceps restoring the lumen and the colostomy closed

The operation of Mikulicz can be applied to very low growths It is astonishing to what extent even the upper part of the rectum can be brought into the abdominal wound On many occasions we have removed rectosigmoid growths in this way, separating the rectum within an inch of the anus, and by loosening and depressing the parietal peritoneum, have succeeded in maintaining the growth exterior to the abdominal cavity Often it is necessary to pack gauze about the protruding mass to support it in the wound beyond the peritoneum The gauze support should be left from ten to sixteen days In very fleshy patients in whom it has been practically impossible to bring the growth to the surface, we have in this manner brought the involved bowel up just outside the peritoneal cavity, and left it in the deep wound with an iodoform gauze support as long as eighteen days When the tumor is finally cut away, the anastomosis will often complete itself without any secondary operation

Occasionally, abscess cavities of considerable size will be found in the pelvis These by no means necessarily indicate that the growth is inoperable, but they require the complete closure of the pelvis following the operation by loosening up and attaching the peritoneum so as to protect the abdominal cavity, and in the female by draining through the vagina In the male, the entire small pelvis must be packed with iodoform gauze These abscesses are more often found in the female than in the male, possibly because of the proximity of the fallopian tubes

At times it is better to terminate these extensive complicated operations for rectosigmoid cancer by a permanent colostomy above, applying a right-angled clamp across the rectum below the growth and sterilizing the stump with the actual cautery The necessary amount of involved sigmoid is then cut away and the proximal end brought out of the median incision just below the umbilicus as a permanent colostomy, after the method of Mixter The cavity of the pelvis about the clamps is packed with iodoform gauze The clamps are removed at the end of a week, and the gauze, the latter part of the second week As a rule, it will be best to fasten the peritoneum at the brim of the pelvis to the sigmoid

To one who has not actually taken part in some of these formidable operations, they might appear impossible, or even if mechanically possible, to be fraught with so much immediate danger and so little chance of permanent cure as not to be justifiable This is by no means true, however, for after such extensive and complicated dissections we have had a very considerable percentage of permanent cures, and in the cases in which the disease has returned, the patient has had a long respite of comfortable existence which could not have been obtained by a palliative colostomy

There were 262 resections of the large intestine for malignancy Of the patients who recovered and who were operated on more than five years ago, 54 per cent are alive Of those operated on more than three years ago, 67 5 per cent are alive

In conclusion, I would urge that patients with cancer of the second half of the colon be given a chance even under unfavorable conditions, because the nature of the disease is such that the prospects of cure are better than for cancer in any other situation in the body, except on the lip and in the fundus of the uterus

ABSTRACT OF DISCUSSION

Dr Edward Martin Philadelphia The interpretation on the part of the individual while absolutely honest is not largely convincing to other than himself The surgery of ptosis is largely obscured as to its ultimate results by the personal equation of the operator and by the impressionable psychology of those exhibiting the symptom complex of this condition But, when it comes to cancer there is a local condition amenable only to surgery and which is either cured or is not cured by it The test of cure is freedom from recurrence and this paper giving us such a test stands as the most notable and authoritative communication on this subject Not the least important part of the teaching is the recital of results on taking any operative risks in so far as immediate survival is concerned, rather than being content with a partial operation or a palliative procedure Indeed, if there be no hope of radical cure, an operative death is not to be regretted So far as discussion of this paper is concerned, the Mayos and the Mayo Clinic are the jury before whom we lay our surgical problems, nor has any surgeon had cause to question the wisdom of their findings

Dr Jerome Morley Lynch, New York As Dr Mayo has said, only those who see these cases and operate frequently can appreciate the number of people who are condemned to death simply because when a diagnosis of cancer is made they stop there and no effort is made to cure these victims I wish Dr Mayo could go before every medical society in the country and state the fact that a great many cases considered inoperable are in reality operable I recall a number of such cases both in my own practice and that of the late Dr Tuttle The sudden onset of constipation, to my mind, is the most important symptom in connection with cancer of the colon It is the general practitioner, and not the surgeon, who sees these cases first, and he should be alive to the possible diagnosis of cancer I have found it almost impossible in some cases to clean the colon previous to operation by any method of catharsis I recall a case of constipation in which I operated for cancer The man returned about three years later He had been until that time absolutely regular and then became constipated I found that he had a nodule not as big as a pencil which proved to be an adenocarcinoma, and the patient is alive today, proving that cancer of the colon is not always fatal Glandular enlargement is no contraindication to radical removal Kocher's statistics support this Many cases in which he had occasion to operate a second time were due to the accompanying infection rather than to the cancer If compatible with life, therefore, I advocate the widest possible removal I agree absolutely with the essayist regarding operative results, and think too great emphasis cannot be placed on the necessity of exploring every case of cancer of the sigmoid colon however inoperable the case might at first sight appear The sudden onset of constipation characteristic of colonic cancer can be explained on biologic grounds Dr Draper and I have been impressed with the difficulty of emptying the colon previous to operation, regardless of the position of the new growth or the involvement of the lumen Lateral implantation with no encroachment of the lumen has offered no exception I have noted impaction following recurrences in a patient whose bowels had been previously regular This recurrence was no larger than a pea Until a better working hypothesis is offered this phenomenon should be looked on as a protective mechanism of the host due perhaps to an enzyme from the cancer

Dr R C Coffey, Portland, Ore Like Dr Martin, we think no further than the Mayo Clinic when it comes to a discussion of cancer of the colon A word might be said, however, of the work of John Young Brown of St Louis who does ileostomy under a local anesthetic with no danger to the patient Far advanced cases are only partially relieved With the use of a bag and cup, however, the patient can go around with perfect comfort The importance of Dr Brown's work has not been appreciated It is certainly far superior to having a colonic fistula and gives much more convenience to the patient

Dr John W Draper, New York This section ought to go on record as subscribing to the statement Dr Mayo made, that you could tie the ureter anywhere in its course and never have any trouble from that kidney We have done it on animals upward of fifty times and then watched for the result on the occluded kidney, but there is no result Just as certainly as the negative renal pressure which is a necessary part of urinary secretion ceases, becomes positive, all secretion stops and you cannot produce hypernephrosis by tying a ligature tight The only way to produce it is by intermittent partial obstruction Complete obstruction is safe Partial obstruction is not safe

Dr Julius H Jacobson, Toledo, Ohio I desire to emphasize the point Dr Mayo makes, that in the presence of obstruction no radical resection operation should be made The Mickulicz three-stage operation is a method which will accomplish much in reducing primary mortality in these desperate intestinal cases The only objection which I find to the method is that the anastomosis when finally completed remains attached to the abdominal wall This, however, seems to be no disadvantage on account of the larger lumen at the anastomatic site It is a method which should be practiced more frequently, particularly in obstructions about the sigmoid portion of the descending colon

Dr W J Mayo, Rochester, Minn Regarding ligation of the ureter, referred to by Dr Draper, of course, in a diseased kidney this might make trouble, but in such a case one would know something of the condition, and such a kidney could be removed, as was suggested in the course of the paper In pelvic operations I believe that a great many times without knowing it the ureter is tied and there is nothing to show for it but a quickening of the pulse for a few days

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A Nation of Wasters —A conservative estimate of the annual number of accidents in the United States which result fatally, or in partial or total incapacity on the part of the worker, has been placed by workers in this field at 500,000, representing an economic loss of $250,000,000 a year The suffering involved and the hardship inflicted on the families of the injured workmen cannot be estimated in terms of dollars and cents We have acquired a reputation as a nation of wasters It is apparent that whenever a life is lost or a workman incapacitated the cost of maintenance of the remainder of the population is thereby increased We would do well in "conserving our national resources" to place the conservation of the life and limb of the workingman at the head of the list It is evident that we are becoming aroused to the need for an effective means to check this enormous economic waste The nation-wide movement toward safety toward accident prevention, and toward the elimination of the hazards of life is a mighty protest against this destruction which is taking place daily That half the accidents in the United States are preventable is the general opinion of the engineering profession —W A Bloedorn

THE CORPUS LUTEUM

ITS LIFE CYCLE AND ITS ROLE IN MENSTRUAL DISORDERS *

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BALTIMORE

Since the publication of Fraenkel's paper,[1] in 1903, the study of the corpus luteum has been the point of departure in most of the investigations which have been made as to the cause and mechanism of menstruation I shall not review the now voluminous literature of this subject, except perhaps to call attention to the definite advance made in 1911 by Robert Meyer,[2] who showed that the corpus luteum, like the endometrium, passes through certain stages corresponding to the various phases of the menstrual cycle

The purpose of this present paper, aside from the study of the normal life cycle of the corpus luteum in relation to the menstrual cycle, includes an effort to determine whether any histologic variations in the lutein structures of the ovary can be found to explain the various menstrual disorders Only the salient points of the inquiry can be sketched within the brief limits of this paper, leaving the more extended discussion of the various aspects of the subject for a more exhaustive report to be published later My investigation so far has embraced the clinical and histologic study of 137 cases from the Gynecological Department of the Johns Hopkins Hospital While these cases constitute the actual basis for the present paper, I have had the opportunity of studying a large number of corpora lutea from cases not included in the series

In 102 of the 137 cases of the series studied, both ovaries had been removed, together with the uterus, so that it was possible to study the histologic picture of the endometrium side by side with the histologic variations in the removed ovaries The latter were thoroughly ransacked, by numerous sections, for all traces of lutein tissue, as well as other characteristic structures which might be of functional importance A careful study was thus made, not only of corpora lutea in various stages of development, but also of other structures, such as mature graafian follicles, atresic follicles, etc In this way it would seem that the possibility of overlooking structures of functional importance could be reduced to a minimum, since the presence of such elements can usually be easily determined macroscopically This is especially true, of course, of the yellow-walled corpus luteum in all except perhaps its earliest stages Only by such thorough examination of both ovaries are any generalizations justified as to the significance of its various elements

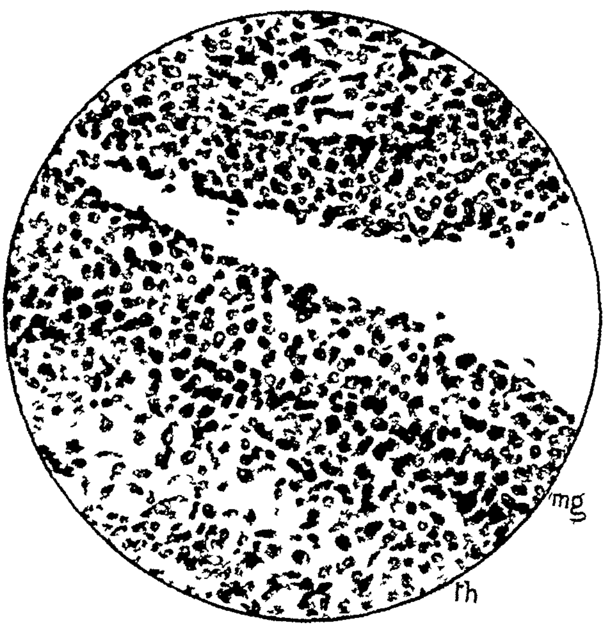

Fig 1 —Portion of wall of mature graafian follicle removed on fifth day of cycle (high power) *mg* membrana granulosa, *th* theca interna All photomicrographs by Schapiro

The mere presence or absence of corpora lutea on the surface of the ovary means very little It is common to find well developed corpora lutea in ovaries which on their surface give little or no indication of their presence For this reason, observations made during operations on ovaries which are not removed are far less valuable than the thorough examination of the ovaries after removal As a matter of fact, the only indication of the site of even large corpora lutea is apt to be a slight hemorrhagic discoloration on the surface Only by cutting into the ovarian substance is the true nature of the otherwise easily overlooked area revealed

Again, since corpora lutea may be present in both ovaries, it is obvious that it would be hazardous to venture any very sweeping deductions unless both ovaries are studied It is for these reasons that I have selected for this study chiefly those cases in which both ovaries had been removed The essential importance of accurate menstrual histories in such an investigation is obvious, as well as a knowledge of the full pathologic findings at operation and in the laboratory

In a second smaller group of cases, numbering thirty-five, all ovarian tissue had not been removed at operation Deductions from these cases cannot be included in any generalization concerning the role of lutein tissue in either normal or abnormal menstruation They have been included in the study because the ovarian tissue removed from them has contained lutein structures which in one way or another are of interest from the standpoint of this investigation

A careful study of the ovaries included in my material has enabled me to secure corpora lutea in practically all stages of development One may thus trace the life history in a consecutive manner from beginning to end Only in this way can an intelligent conception be gained as to the origin, development and ultimate fate of the structure derived from the rupture of the ripe graafian follicle

With a few exceptions, those who have studied the corpus luteum in the past have seemed to disregard the fact that, like the endometrium, it undergoes a change from day to day The stereotyped conception of the corpus luteum seems to have been that of a large structure, with brilliant yellow undulating walls, standing out sharply from the cut surface of the ovary While this description fits the corpus luteum in certain stages of its development, it is altogether incorrect as applied to others The above mentioned characteristics are apt to be those of the fully developed corpus luteum, which has, however, reached this stage only after a process of gradual development extending over many days The presence of the large yellow walled corpus luteum does not, therefore, signify that ovulation has occurred just previously, as so many have assumed in discussing the subject

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* From the Gynecological Department of the Johns Hopkins Medical School

* Read before the Section on Obstetrics Gynecology and Abdominal Surgery at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

* Because of lack of space this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author s reprints A copy of the latter will be sent by the author on receipt of stamped addressed envelope

[1] Fraenkel L Arch f Gynak, 1903 lxviii 438
[2] Meyer Robert Arch f Gynak 1911, xciii, 354

In its earliest stages, just after rupture of the graafian follicle, the corpus luteum is usually a small, collapsed structure, with thin, moderately undulating walls, which are of grayish yellow hue instead of the brilliant yellow color of the later stages For this reason the earliest stages are very inconspicuous and are usually overlooked Indeed, their discovery, even with careful search, must be looked on as in large measure accidental The difficulty of securing these early stages is increased by the uncertainty as to the exact time of ovulation, so that it is not possible, in the present stage of our knowledge, to arrange operations of election with a view of obtaining these early corpora lutea Again, there is much evidence that the changes in the early history of the corpus luteum take place very rapidly, so that the earliest stages, speaking histologically, extend over a comparatively short time

It is not surprising, therefore, that there have been very few observations in the human being on the earliest stages of the corpus luteum Indeed, I know of no such observation, with the exception of the questionable one of Kreis[3] in 1899, until the report of Meyer's series of cases in 1911 And yet the study of the corpus luteum in its earliest stages throws a light otherwise unobtainable on such important questions as that of the origin of the lutein cells — the still open question as to whether they arise from the epithelial cells of the membrana granulosa or from the connective tissue cells of the theca interna For this reason I have been especially on the alert in the investigation of my material for these early stages of corpus luteum development, and have been rewarded by finding five interesting examples On account of the rarity with which such cases have been described, I shall refer briefly to the findings in these five cases

Case 1 (private patient) —Mrs L M, aged 28, was operated on by me at Mercy Hospital, March 2, 1916, the operation consisting of left salpingo-oophorectomy, appendectomy and resection of the right ovary Menstruation had always been regular, lasting five days and being moderate in amount The last period before operation commenced February 21, lasting five days, so that operation was done on the tenth day of the menstrual cycle

Careful examination of the left ovary afterward failed to reveal any lutein structures It contained, however, a follicular cyst about the size of a walnut, and numerous smaller cysts The wedge of right ovary which had been removed, however, presented a small dark reddish discoloration on the surface On section this was found to mark the site of a scalloped cavity, a little over 1 cm in diameter, which contained no blood, the hemorrhagic appearance of the surface being apparently due to the excessive hyperemia of the walls At one point there was a small eroded spot representing the point of rupture

Microscopic sections revealed a picture which I had heretofore not observed, and which is well shown in Figures 2 and 3 The membrana granulosa is not only present, but there is not the slightest indication of degeneration The cells are still quite compact, resembling those of the mature graafian follicle, except that they are more cylindric (compare Figure 1) The most remarkable change is evident in the cells of the theca interna These have become large, epithelioid, and infiltrated with fat The theca interna has become very vascular, its blood vessels, derived from the theca externa, pushing centripetally toward the granulosa, which, however, is not yet invaded Especially striking is the vascular line of demarcation which has formed between the granulosa and the theca

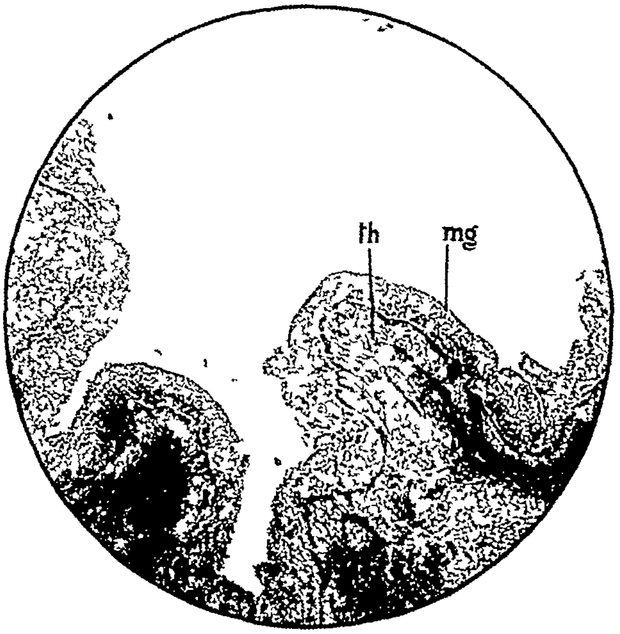

Fig 2 —Portion of wall of early corpus luteum removed on tenth day of cycle (low power) *mg* membrana granulosa *th* theca interna Note the vascular line of demarcation between these two layers

Case 2 (Gyn Path No 21216) —The patient was a white woman of 46, on whom a radical operation for cancer of the cervix was done in Dr Kelly's service, May 19, 1915 Menstruation was irregular on account of the carcinoma, a bloody discharge having been present for eight months Both ovaries were small and cirrhotic The surface of the right ovary showed a small hemorrhagic discoloration, beneath which was found a cavity with scalloped walls, measuring about 1 by 2 cm The cavity itself contained no blood, but there was much hemorrhagic infiltration of its wall in places, especially near the surface The microscopic picture was almost identical with that shown in Figure 1 The endometrium was of the interval type

Case 3 (Gyn Path No 21223) —This patient, a white woman of 38, was operated on in Dr Kelly's service, May 24, 1915, for the radical removal of a carcinoma of the cervix Preliminary cauterization was done, May 15, 1915 The last menstruation had begun May 2, although the intervening operation and the presence of the cancerous disease detract from the importance of the menstrual history The right ovary contained an early corpus luteum similar to those in Cases 1 and 2 There was in this case, however, a very great hemorrhagic extravasation surrounding the wall of the corpus in many places obscuring the cells of the theca The endometrium was of the interval type

Case 4 (Gyn Path No 21195) —A white woman, aged 34, was operated on in Dr Kelly's service, May 13, 1915, for chronic pelvic inflammatory disease, with left tubo-ovarian abscess Panhysterectomy, with double salpingo-oophorectomy, was performed Irregular bleeding had been present for two months The right ovary contained a small cavity, a microscopic section of which is pictured in Figure 4 The same ovary contained a large corpus luteum in the stage of retrogression The endometrium was of the interval type The corpus luteum pictured in Figure 4 differs from that represented in Figures 2 and 3 in that the granulosa cells are losing their long cylindric shape and are becoming larger and more polygonal In other words, they are beginning to assume the morphologic characteristics of lutein cells On the other hand, the theca cells are much less conspicuous than in the earlier stage, having lost much of their fatty content

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[3] Kreis O Arch f Gynak 1899, lviii 426

Case 5 (Gyn Path No 21333) —This patient was a colored woman, aged 43, who was operated on in Dr Kelly's service, July 6 The operation was hysterectomy with double salpingo-oophorectomy, on account of extensive inflammatory disease with cystic degeneration of both ovaries Menstruation had always been regular, lasting two or three days, with moderate flow The date of the last menstruation was June 20, so that the operation was done on the sixteenth day of the menstrual cycle In the right ovary was a blood-filled cavity measuring 3 5 by 1 5 cm which proved to be a corpus luteum cyst Between this and the surface of the ovary, just beneath the latter, was a rather flattened cavity which on microscopic examination was found to be an early corpus luteum, similar to that found in the preceding case

The five specimens of early corpus luteum here reported are alike in the very important particular that in all of them the epithelial cells of the granulosa are, to say the least, quite intact This fact is of prime importance in the consideration of the origin of the lutein cells One of the strongest arguments against the epithelial origin of these cells has been the alleged degeneration and disappearance of the membrana granulosa after rupture of the follicle In each of my five specimens, however, the epithelium is well preserved Moreover, in Cases 4 and 5, it exhibits definite signs of a luteinlike transformation This I look on as a vital point — *the* vital point — in connection with the question of the origin of the lutein cell If we can demonstrate in human beings, as Sobotta[4] seems to have shown in lower animals, that there is a direct transformation of the granulosa cell into the lutein cell, the problem is solved I believe that Figures 1, 2, 3 and 4 illustrate such a beginning transition of the granulosa cell to the lutein cell It will be noted that this transformation is already well under way before there is any evidence of vascular invasion of the granulosa layer, and that as the granulosa cells assume lutein characteristics, the cells of the theca become less conspicuous, giving up much of their fatty content This may be observed from a comparison of Figures 3 and 4 From this it might be inferred that the theca cells, with their rich fatty content, fulfil an important nutritive function, as Meyer has suggested The gradual retrogression of the theca cells, moreover, is another indication that it is not they that are to be transformed into lutein cells

That the structures which I have described are really corpora lutea and not merely mature and unruptured follicles is evidenced, not only by the demonstration of a definite point of rupture in at least two of the cases, but also by the many layers of the epithelium, by the cylindric shape and large size of the cells, by the striking fatty deposit in the theca interna, and by the pronounced and characteristic hyperemia (Compare Figures 1 and 3)

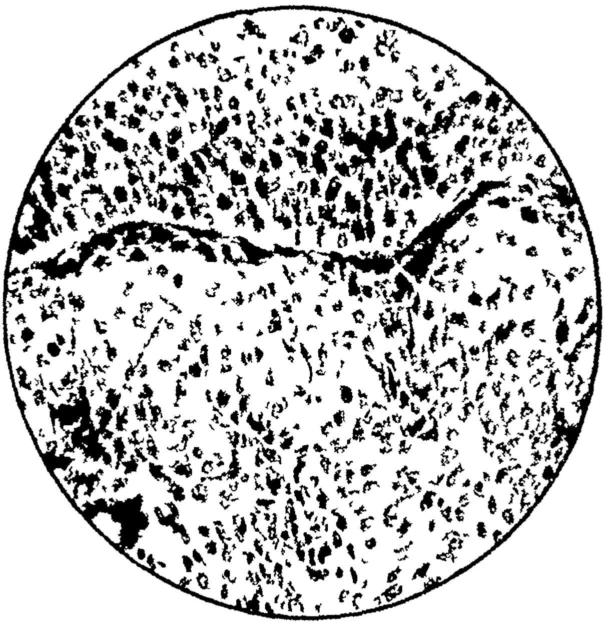
Fig 3 —High power picture of corpus luteum shown in Figure 2 Compare with Figure 1

As to the time relation of these early corpora lutea to the menstrual cycle, only two of the five cases, unfortunately, can give any trustworthy evidence, owing to the irregular bleeding present in the others The structure found in Case 1 and pictured in Figure 2 was obtained on the tenth day of the menstrual cycle For the absolute accuracy of the menstrual history in the case I can vouch In Case 5, on the other hand, the patient was operated on on the sixteenth day of the menstrual cycle, although histologically it represents only a slightly later stage than that seen in Case 1 Meyer's earliest corpus luteum was found on the twelfth day of the cycle The unruptured follicle pictured in Figure 1 was removed on the fifth day of the cycle It would be indiscreet to draw from this small group of cases any conclusions as to the time of follicular rupture Indeed, it does not seem to me that a sufficient number of cases have as yet been studied by all investigators collectively to warrant any such generalization I may simply state that in the five cases reported by me ovulation seems definitely to have occurred in the first half, or perhaps we may say the second quarter, of the intermenstrual period and that the time of follicular rupture is subject to a certain — perhaps a considerable — degree of individual variation

The later stages of the development of the corpus luteum I shall pass over much more briefly, as my observations differ in no important respect from those of Meyer In the five cases above described, there was no evidence of invasion of the epithelium by the blood vessels of the theca Figure 5, which pictures a corpus luteum removed on the fourteenth day of the menstrual cycle, shows a somewhat later stage The granulosa cells are large and epithelioid, and contain some fat In other words, they now possess all the morphologic characteristics of lutein cells The lutein zone is still rather narrow and only slightly undulating

The most significant feature of this stage, however, is the invasion of the lutein layer by small blood channels These are clearly traceable back to the ring of blood vessels which marks the division between the granulosa and the theca, as described in connection with the earlier stages Some of the blood in the lutein zone is present in definite endothelium-lined vessels, while some lies free between the cells, making its way to and into the cavity of the corpus Even in this early stage, endothelial cells may be observed here and there to push out into the lumen, forecasting the organization of the blood contents which takes place in the late stages of the corpus luteum It will also be seen that vascularization of the lutein layer is chiefly responsible for the bleeding into the cavity of the corpus, and for the organization of the lumen contents From a physiologic point of view, it is of great importance because, in addition to carrying nutriment to the lutein cells, it enables their secretion to be emptied directly into the blood stream Together with the advance in the development of the lutein cells, there is a corresponding retrogression in the theca cells They have lost most of their fat, and are apparently reverting to the type of ordinary connective tissue cells

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[4] Sobotta J Arch f mikrosk Anat 1896, xlviii, 261

In Figure 6, which represents a considerably later stage, the theca cells are inconspicuous, while the lutein layer appears as a broad festooned zone irrigated by numerous blood channels The corpus luteum in this picture is rapidly approaching the stage of maturity, which is illustrated in Figure 7 Here one sees the corpus luteum in full bloom Operation in this case had been done on the twenty-seventh day of the menstrual cycle The lutein cells are large and polygonal, and give every histologic appearance of active function Toward the lumen they are separated from the contents by a delicate layer of organized tissue, whose formation from the septa penetrating the lutein layer from the theca is clearly traceable Meyer attaches great physiologic importance to this layer, as indicating that the secretion of the lutein cells can no longer be given off into the lumen, but must pass back into the blood stream In many mature corpora lutea which I have examined, however, this layer is very poorly marked, and I believe that irrigation of the lutein zone by the vascular channels is more important than the formation of this organized layer in determining the internal secretory function of the corpus luteum

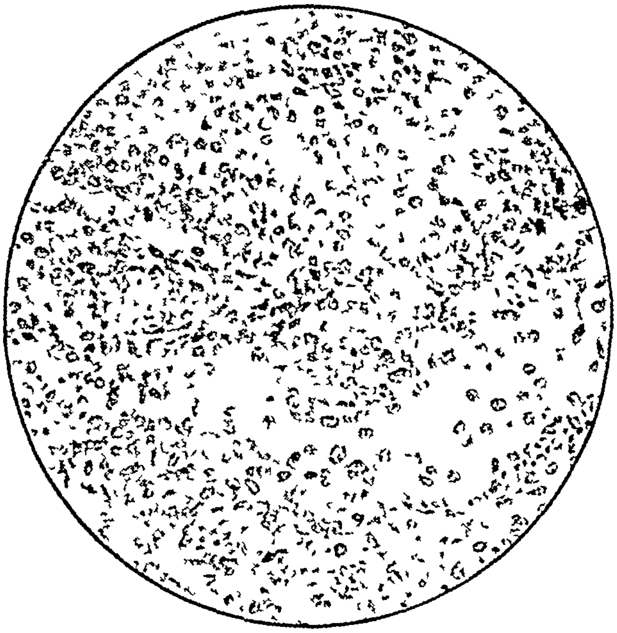

Fig 4 —Wall of early corpus luteum slightly more advanced than that shown in Figure 3 (high power) Note the lutein like change of granulosa cells and beginning retrogression of theca cells

The present series included twenty-four corpora lutea classified histologically as mature Reference to the menstrual histories in these cases showed that operation had been done at periods varying from the eighteenth to the twenty-seventh days of the cycle In other words, the mature corpus luteum is found during that portion of the cycle in which the endometrium exhibits the premenstrual hypertrophy

An exceedingly interesting feature of many corpora lutea, especially near the stage of maturity, is the remarkable development of the theca interna cells This is well shown in Figure 7, and, more highly magnified, in Figure 8 The theca cells are seen to be fully as well developed as are the lutein cells, though they are of quite a different type The contrast is very striking The large size of the theca cells, their alveolar arrangement, the richness of their blood supply, all suggest a glandular structure and function I cannot believe, as does Meyer, that the theca cells, after fulfilling a nutritive function in the earliest stages of the corpus luteum, retrogress and serve no further purpose The name of "paralutein" cells was given to these cells by Pinto,[5] who, however, credits them with no special function Such pictures as that shown in Figure 8 speak strongly against such a view The corpus luteum pictured in Figure 9 shows a similar theca change occurring with an early tubal pregnancy Incidentally it illustrates also the broader lutein zone and the more advanced organization of the corpus luteum of pregnancy The theca changes represented in Figures 7 and 9 are practically the same, though one patient was pregnant and the other was not

There can be little doubt that the corpus luteum possesses at least a dual function Even Fraenkel attributed to it not only the causation of menstruation but also the fixation of the ovum in the early part of pregnancy Since the luetin cells proper are almost certainly concerned in the causation of the menstrual *phenomena, perhaps the paralutein cells are in some* way concerned in the other important function ascribed to the corpus luteum This, however, is a problem of biologic chemistry I may simply state that in nineteen corpora lutea exhibiting marked development of these paralutein cells, all except a few were removed from patients who gave histories of profuse and, in a few instances, irregular menstruation It is curious to note, also, that many of the patients were sterile In some cases pregnancy had never occurred although the patient had been married many years, while in others, again, there had been a long period of secondary sterility

ORIGIN OF THE LUTEIN CELLS

Such a complex question as this cannot, of course, be adequately discussed in the limits of the present paper I shall merely indicate one or two facts which the study of my cases has brought out and which seem to throw light on this problem The theory of the connective tissue origin of the lutein cells was supported by von Baer, the discoverer of the human ovum, and, after him, by His, von Kollicker, Spiegelberg, Paladino, Schottlander, Clark, Holzl, Nagel and others On the other hand, the theory of the epithelial genesis of the lutein cells has found able supporters in Bischoff, Pfluger, Call and Exner, Schulin, Waldeyer, Sobotta and others The latter theory, moreover, is favored by most of the modern German school of investigators who have contributed so much to our knowledge of the corpus luteum

The question of the origin of the lutein cells in the lower animals has been conclusively settled by the exhaustive studies of Sobotta[4] on mice, rabbits, guinea-pigs and other mammals Sobotta's studies indicate that in the lower animals, at least, *it is from the epi-*

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[5] Pinto C *Ann di obstet e ginec 1905 (quoted by* Seitz, Footnote 6)

thelial cells of the membrana granulosa that the lutein cells are derived It is questionable, however, whether these findings may be taken as applying to the human corpus luteum, especially since there has been such a paucity of accurate studies of the human structures

Without going into the evidence pro and con, I may say that the balance was thrown decidedly in favor of the epithelial origin of the lutein cells by the studies of Robert Meyer on very early stages of corpus luteum development, as already mentioned The early corpora lutea described by me in this paper fully confirm Meyer's claim that the cells of the membrana granulosa do not undergo degeneration after follicular rupture Furthermore, the "paralutein" cells found in many corpora lutea, constituting a distinct zone between the lutein layer within and the theca externa to the outer side, are, with scarcely a doubt, developed from the theca interna If this be true, there is no reasonable doubt of the origin of the lutein cells from the epithelium of the membrana granulosa

Finally, the demonstration, as seen in Figures 1, 2, 3, 4 and 5, of a direct transformation of the granulosa cells into, first, luteinlike cells and then into actual lutein cells, is the strongest and most direct histologic evidence that can be brought to bear on this question The great desideratum at the present time is the secural of many more early corpora lutea, so that all possible stages may be described in the actual conversion of granulosa cells into lutein cells Such evidence is infinitely more valuable than any that can be obtained from the study of the mature corpus luteum

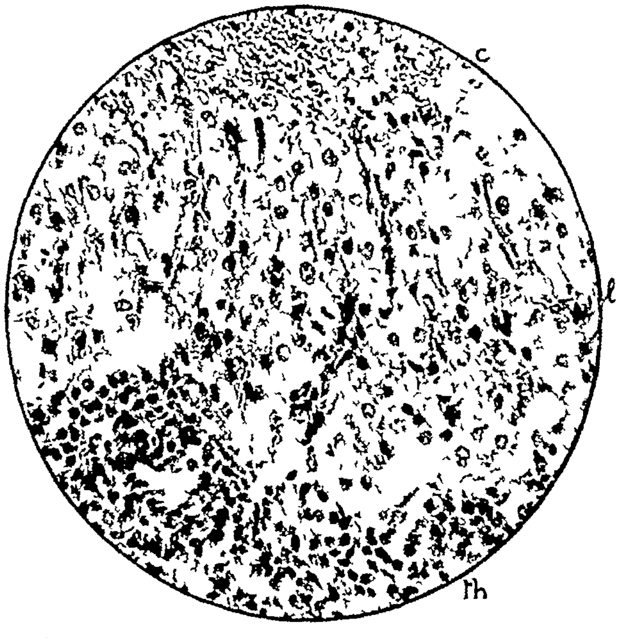

Fig 5—Wall of corpus luteum in stage of early vascularization sixteenth day (high power) Blood vessels from the theca are pushing into the granulosa layer (*l*) which now possesses definite lutein characteristics The theca cells (*th*) have lost their fat and are retrogressing Note the beginning invasion of the blood in the cavity (*c*) by endothelial cells

ATRESIA FOLLICULI AND THE THECA LUTEIN CELLS

Only a very small percentage of the follicles in the ovary attain maturity, with the discharge of their ova and the development of corpora lutea The great number sooner or later exhibit the phenomenon of atresia, which is characterized by degeneration of the ovum and of the epithelial cells of the granulosa I shall not here discuss the influence which brings about this arrest in the development of the follicles, except to say that it seems to emanate from the discharged ovum The cystlike cavities resulting from atresia are found in practically all ovaries during the reproductive period, and not infrequently even in the ovaries of fetuses and young children When present in excessive number, they give rise to the well known fibrocystic disease of the ovary The later history of the cystic atresic follicle is a gradual process of obliteration In other words, the two varieties of atresia folliculi described by Seitz,[6] the cystic and obliterative, are in reality only different stages of the same process

The theca cells of the atresic follicle, as is well known, exhibit a striking change during pregnancy, giving rise to the so-called "interstitial glands" Although no special attention seems to have been paid to their behavior in the nonpregnant condition, the arrangement of these cells strongly suggests that these cells possess some sort of function What the relation of the theca lutein cell is to the paralutein cell already described I do not believe can be stated in the present stage of our knowledge

As to the clinical significance of atresia folliculi, we may look on the process as, within certain limits, physiologic On the other hand, the so-called fibrocystic ovary, to which so much pathologic importance was attached in the past, represents usually a marked exaggeration in the number and size of the atresic follicles The particular point which struck me in going over my cases was that the ovaries which exhibited extreme degrees of follicular atresia, i e, the fibrocystic ovaries, were almost always associated with excessive menstruation I hasten to add that I do not look on the fibrocystic disease as the cause of the excessive menstruation I do believe, however, that, like the latter, it is an evidence of excessive ovarian function The majority of these ovaries are found in association with pelvic inflammatory disease, which brings about a greater or less increase in the blood supply of the ovary with hyperfunction as the natural result Another result of the ovarian hyperemia is a stimulation of the growth of the follicles throughout the ovary Only one of these each month, as a rule comes to rupture, the others forming the numerous cavities of varying size, with or without epithelium, scattered throughout the ovary If this view is correct, the presence of the fibrocystic ovary is an important index of ovarian hyperemia and hyperfunction, with excessive menstruation as the most frequent clinical symptom This would explain, moreover, the frequent good results obtained by resection of a greater or less amount of ovarian tissue in cases of this type

CLINICAL CONSIDERATIONS

One of the purposes of this study has been to determine whether any characteristic anatomic changes in the ovaries, especially as regards lutein tissue, are associated with the various disorders of menstruation The histologic appearance of a tissue cannot be taken as an index of its functional activity It would be of value, however, to know whether amenorrhea on the one hand or excessive menstruation on the other are associated with differences in the lutein cell content of the ovary, as one would expect might be the case

One of the most important methods of studying the function of an organ is to study the results of its removal I need only mention the valuable results yielded by this method of study in the case of other endocrine glands, such as the thyroid, parathyroid, suprarenal or pituitary Fraenkel's plan of destroying the corpus luteum by the cautery point, crude and imperfect as it was, is an illustration of the same method as applied to this structure The indispensability of the corpus luteum to menstruation can be determined with far greater accuracy, however, by the histologic method During the menstrual life of the normal woman, lutein tissue in some stage or another of development is always to be found in the ovaries On the other hand, in the nonmenstruating woman corpora lutea are absent Many cases might be described to illustrate this fundamental role of the corpus luteum in menstruation

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[6] Seitz, L Arch f Gynak 1906 lxxvii, 203

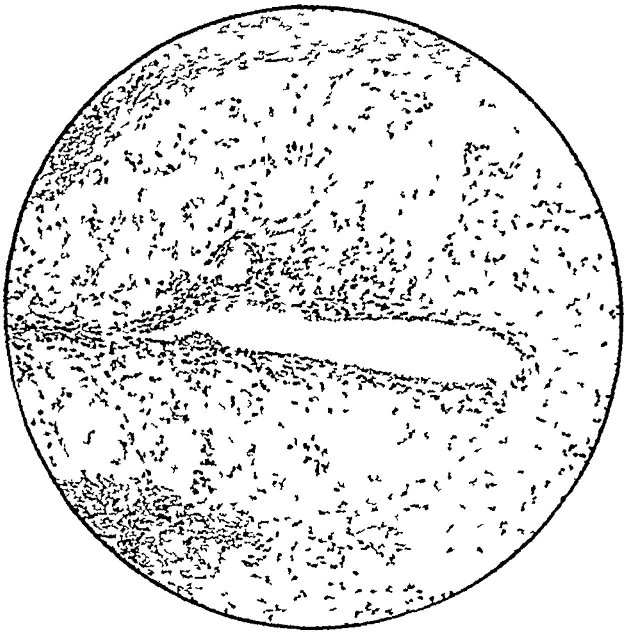

Fig 6—Wall of corpus luteum in stage of late vascularization approaching maturity (low power)

While it is true that a greater or less degree of maturation of graafian follicles is frequently observed in the ovaries of girls before puberty, and even in those of fetuses and new-born children, corpora lutea are never found Although I have studied a considerable number of very young ovaries, I have never observed a corpus luteum in them On the other hand, I have frequently seen well developed graafian follicles and atresic follicles

To pass to the other extreme of menstrual life, corpora lutea are never found in the ovaries of women who have ceased to menstruate For a number of months after the last menstrual flow, retrogressive corpora lutea are, of course, present, and degenerated lutein cells may be observed, but this does not alter the general rule

Of especial interest in this connection is the amenorrhea of lactation That ovulation occurs during this period is obvious from the frequency with which impregnation occurs among nursing women Certainly, therefore, one must expect to find corpora lutea in the ovaries of lactating women Why, then, is menstruation so frequently absent during lactation? The evidence all indicates that the menstrual function of the corpus luteum is nullified by the new element which comes into activity during lactation, i e, the influence of the functioning mammary gland This influence is exerted through the medium of a hormone, which tends to inhibit or to counteract the secretion of the corpus luteum A similar explanation suggests itself with regard to the amenorrhea of hypopituitary obesity (dystrophia adiposogenitalis), while the amenorrhea of anemia, phthisis and other debilitating conditions is due either to an inhibitory effect on the secretory cells of the corpus luteum, or, more probably, to the failure of ovulation itself Which of these two factors is responsible can be determined only by the careful study of ovaries from women suffering from these various diseases So far as I know, such studies have not yet been made

With regard to the opposite condition of excessive menstruation, the problem is much more difficult and complex Many factors are to be considered in attempting to explain uterine bleeding, as emphasized in a previous paper before this section[7] At present, however, we are dealing only with the possible role of the ovary in this connection

As is well known, Hitschmann and Adler[8] have attempted to show that in the great majority of cases uterine bleeding is due to either functional or organic disturbance in the ovaries For example, such conditions as salpingitis are especially apt to produce excessive menstruation when the ovary is involved in the inflammatory disease When the ovary is free there is less likelihood of menorrhagia or metrorrhagia This rule, if I may so speak of it, does not, of course apply to diseases such as carcinoma of the uterus, in which the bleeding is due to actual local destruction of tissue and invasion of blood vessels by the disease

Since it seems to be demonstrated that the corpus luteum is the cause of normal menstruation, it would seem most probable that we must look to disturbance of this structure for an explanation of the disorders of menstruation The histologic evidences of hyperfunction would naturally be either overdevelopment of

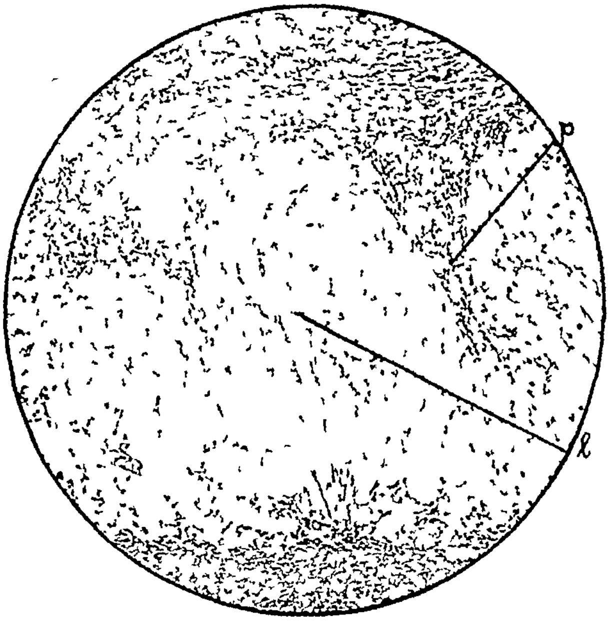

Fig 7—Wall of mature corpus luteum twenty seventh day (low power), showing lutein (*l*) and paralutein (*p*) cells The latter are found in the wedgelike septa

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7 Novak Emil The Pathologic Physiology of Uterine Bleeding The Journal A M A Aug 22 1914, p 617

8 Hitschmann and Adler Arch f Gynak, 1913 c, 233

the normal corpus luteum, of the presence of other lutein tissue than that to be found in the corpus luteum (accessory corpora lutea, corpus luteum cysts, etc) A careful analysis of my cases has failed to reveal anything like a direct relation between the degree of lutein development in the ovary and the clinical intensity of the menstrual flow Speaking generally, the corpus luteum from a case of excessive menstruation shows no greater development than that from a case of scanty menstruation at a corresponding stage in the menstrual cycle Such a conclusion is not justified unless both ovaries are thoroughly ransacked in all parts so that no lutein tissue structures will be overlooked This was done, as has been mentioned in 102 cases of this series, and it is of course on these alone that I have based the assertion that variations in the amount of menstrual flow are not due to differences in the degree of development of the lutein tissue of the ovary This does not, however, preclude the possibility of functional increase or decrease being the cause of increase or decrease in the menstrual reaction Nor can we forget the all-important fact that even though the ovarian secretion is the immediate cause of menstruation, this function is also influenced by practically all the other endocrine glands of the body The ovary is merely the portal through which the entire ductless gland change exerts its influence on the functions of the female generative organs Whereas formerly anatomic causes were presupposed in practically all cases of uterine bleeding, now the evidence is pointing more and more clearly toward the importance of functional disturbances in the ovary and of the endocrine system of which it is a part To this general principle, the bleeding caused by such actually destructive lesions as cancer is of course an exception

26 East Preston Street

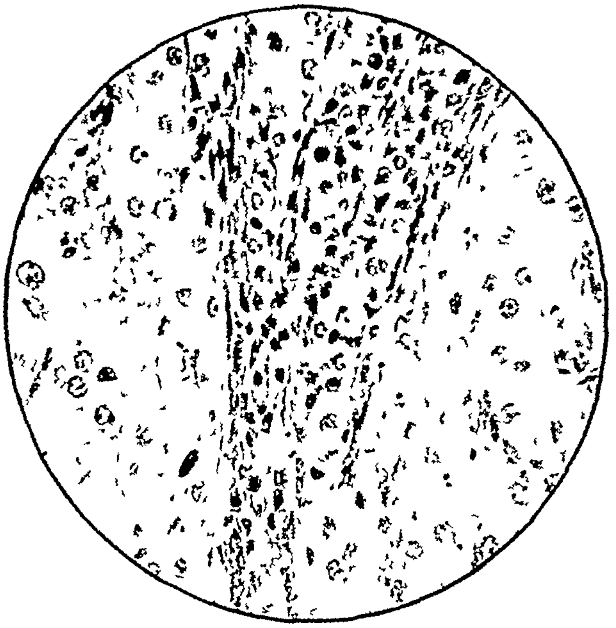


Fig 8—Contrast between lutein and paralutein cells near top of septum shown at *p* in Figure 7 (high power)

ABSTRACT OF DISCUSSION

Dr Carey Culbertson, Chicago I was pleased that Dr Novak regards the lutein cell as the histologic derivative of the membrana granulosa—hence of embryonic epithelial origin—rather than as modified from the internal theca This opinion is in accord with my own teaching during the past ten years The corpus luteum must be thought of as implying not only folliculation but ovulation, hence I agree with the speaker again in his remarks anent Dr Reynold's description of the atretic follicles that is, that in the atretic follicle the band of more or less degenerated cells does not represent lutein cells A follicle that has become cystic before casting off its ovule can never develop a corpus luteum hence, can never produce a hormone nor eventually result in a corpus albicans Another point in Dr Novak's paper which requires reinforcement is that pertaining to the theca interna This represents a very interesting cell change indeed, on which the corpus luteum seems to be absolutely dependent The corpus luteum must not be thought of as a histologic entity in that it can exist by itself be transplanted, etc It depends for its cell development, for its activation, directly on the underlying theca wherein we find the essential blood supply Indeed, after all, the term "activation" may mean nothing but vascularization—the dilatation of capillaries with the consequent imbibition of serum whereby certain special cells reach the height of development and are thereby able to produce a certain active principle called a hormone

Dr E Novak Baltimore As Dr Culbertson remarked, the tendency in this country has apparently been in favor of the connective tissue origin of the lutein cell, probably as a result of the influence of certain American writers If such observations as those which I have reported are confirmed, it will be necessary to revise this teaching The evidence of the epithelial origin of these cells is based on the following observations (1) The membrana granulosa is not lost after follicular rupture, but remains practically intact and virile, (2) a direct transformation of the granulosa cells seems to have been demonstrated, (3) the theca cells, while epithelioid and fatty shortly after follicular rupture, soon exhibit a retrogression to the ordinary connective tissue type, (4) if, as seems almost certain, the paralutein cells are derived from the theca interna, the lutein zone must represent the transformed granulosa, (5) exhaustive studies of the corpus luteum in lower animals have clearly demonstrated the epithelial origin of the lutein tissue in these animals The time is soon coming when the mystery which has always enshrouded the menstrual phenomenon will be dissipated We are rapidly accumulating facts which will sometime enable us to treat menstrual disorders as rationally as we treat such analogous disorders as those of the thyroid gland There can be little doubt that perfected organotherapy will play a more important role in the management of many of these cases in the future than it has in the past

Mutations of de Vries—It would appear from the researches of de Vries and other botanists that the sudden alterations of structure and function which may be known as mutations of de Vries are of far more general occurrence among plants than among animals Such mutations are attributable to sudden alterations of molecular and atomic constitution Sensitiveness to the biochemical reactions of the physical environment should theoretically be more evident in organisms like plants which derive their energy directly from inorganic compounds which are constantly changing their chemical formulae with the conditions of moisture, of aridity, of temperature, of chemical soil content than in organisms like animals which secure their food compounds ready-made by the plants and possessing comparatively similar and stable chemical formulae Thus a plant transferred from one environment to another exhibits much more sudden and profound changes than an animal, for the reason that all the sources of plant energy are profoundly changed while the sources of animal energy are only slightly changed The highly varied chemical sources of plant energy are, in other words in striking contrast with the comparatively uniform sources of animal energy which are primarily the carbohydrates and the proteins formed by the plants—The Origin and Evolution of Life Upon the Earth, Henry Fairfield Osborn

LEPRA MUTILANS

MELVIN S ROSENTHAL, M D
Fellow of the American College of Surgeons
BALTIMORE

History—C C, a colored bootblack, aged 22, single, applied to Dr John Chambers of the Mercy Hospital, April 10, 1916 for ulceration and necrosis of fingers of both hands Suspecting the possibility of leprosy, Dr Chambers referred the patient to the dermatologic department, where the following history was elicited The patient was born in Demerara, British Guiana, in 1893 The mother died of dropsy about fifteen years ago The father was living and well A brother and sister were living and apparently healthy There was no history of any skin disease on either side of the family In 1897 the family migrated to Barbados, West Indies, where the patient remained until 1907, coming to New York as a laborer The following year he came to Sparrows Point, Md, and worked in the iron mills At about this time the patient noticed a slight contraction of the fingers of both hands which was not serious enough, however, to incapacitate him from work While engaged at his occupation he dropped a bar of hot iron on his foot, and in removing it severely burned his fingers and toes The burns were painless and showed but slight disposition to heal, the injured surfaces remaining denuded of skin, the soft tissues gradually receding from the bone, leaving the ends of the bones exposed and charred These finally sloughed off, leaving ulcerated surfaces on the fingers but clean cicatricial masses on the toes Subjectively the only symptoms were loss of sensation in hands and feet, with slight burning and tingling in the parts Except for the discomfort arising from the loss of fingers and toes and the unsightliness of the disease, the patient had suffered no pain or inconvenience, being able to follow his occupation until the diagnosis of leprosy was made

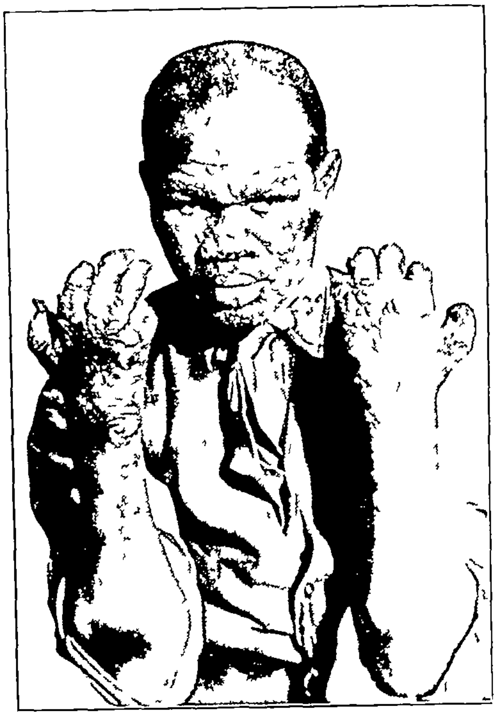


Fig 1—Lepra mutilans mutilation of fingers leukodermic spots on arms loss of septum eyebrows and eyelashes face studded with many tubercles which are especially prominent around the mouth and chin

Examination—The patient was a well nourished black negro apparently about 40 years of age There was slight alopecia presenilis without evidence of inflammation The skin on the face was thickened, indurated and covered with a large number of tubercles of various size and shape Around the mouth, chin and nose they were especially abundant The eyebrows and eyelashes were scant, and the beard practically lost There was a mass of ulcers on the mucocutaneous margin of the lips The nasal fossae were studded with a large number of ulcers extending into the posterior nares There was complete loss of septum, flattening the nose against the face Both external ears were covered by many small tubercles extending deep into the auditory canal Many of these tubercles were broken down and suppurating Both hands were covered with a black, foul smelling debris, but slightly adherent to the skin The removal of this mass showed many ulcers and scars There was complete destruction of the little fingers of both hands Both thumbs were thickened, and there was destruction of the terminal phalanges On the right, the phalanx remained as a charred mass, and was readily removed by slight traction The other fingers were thickened and partly destroyed The ends of the stumps on all the fingers were open and suppurating The back of both hands and forearms were covered with numerous leukodermic spots, circinate in outline with central loss of pigment There was no apparent change in the muscular structure of forearms or hands There was complete anesthesia of both arms extending in an irregular outline from the elbow down Large sections were removed from the hands for microscopic examination without causing the slightest pain There was complete destruction of all the toes on the left foot, a clean, healthy cicatrix covering the entire area On the right foot there remained part of the great toe, the second toe was ulcerated and partly destroyed, the other toes were destroyed On the inner surface of the right foot was a long scar, the result of a surgical operation for supposed gangrene There were a few leukodermic spots on both feet There was complete anesthesia below the knee There was palpable thickening of the ulnar and median nerves, with evidences of nodes The ankle and patellar reflexes were lost The Wassermann test was negative Smears made from the nose, mouth and hands showed the presence of large numbers of rod shaped acid fast organisms found in groups and closely resembling the tubercle bacillus In sections the same organisms were found Roentgenograms of the hands showed a symmetrical destruction of the phalanges of both hands

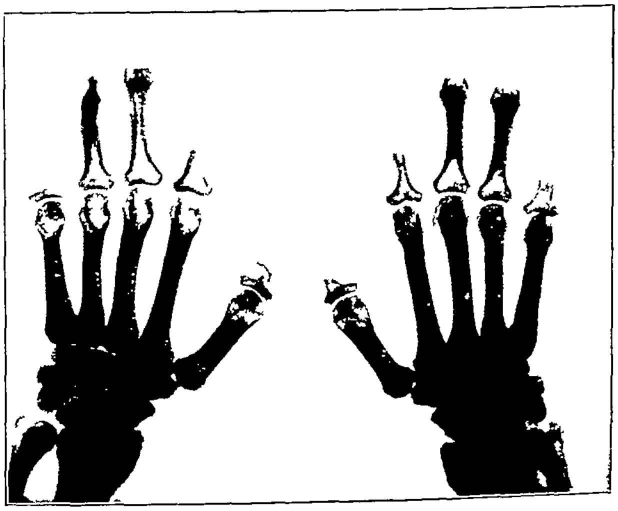


Fig 2—Symmetrical destruction of bones of hands

The syndrome of the clawlike contraction of the fingers, followed by painless and gradual loss of the digits, the complete anesthesia, mutilation and thickening of the face, the ulceration around the mouth and nose, and the leukodermic spots on the hands and feet, identify this as a case of leprosy without the refinement of differential diagnosis, yet a number of unusual features makes it of more than ordinary interest

It is difficult to conceive that a man with so pronounced and evidently serious a skin disease should have entirely escaped a diagnosis in spite of the fact that within a year he had been treated both as an ambulatory and a bed case in several hospitals. The rapidity of the tuberculous and destructive process in the face had been unusually rapid. The amount of mutilation which had taken place in this patient in about a year ordinarily takes from three to five years. He had been able to follow his occupation as bootblack continuously until the diagnosis was made. By means of leather bands into which his hands were fitted he was enabled to hold his brushes and shine shoes. His stand was in the neighborhood of the Mercy Hospital, and his patrons were largely medical students, and it was through the curiosity of a medical student that he was induced to visit the Mercy Hospital.

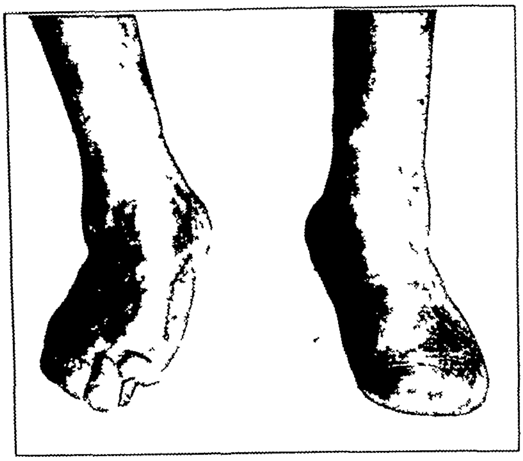


Fig. 3.—Complete spontaneous amputation of toes of left foot leaving a healthy cicatrix; partial amputation of toes of right foot showing ulcers and denuded bone; scar of inner surface result of operation for necrosis.

The horror with which the public views leprosy makes the disposition of these cases a difficult problem. While direct evidence is lacking as to the communicability of the disease in this climate, it is assuredly hazardous and undesirable to allow absolute freedom to a poverty stricken individual lacking all the facilities of ordinary cleanliness, living in filth and squalor, and incapacitated by his deformity from caring for himself. Smears made from the hands, mouth, nose and lips were filled with the lepra organisms, and in our present state of uncertainty it would be prudent to isolate these patients.

The case was originally reported to the health department, April 13, as a case of leprosy, but up to the present time (June 9) the department has taken no official recognition of the disease, treating the patient simply as a pauper, and referring him to the supervisor of city charities for admission to the almshouse. This department in turn, claiming leprosy to be a menace, has refused him admission, transferring the case to the City Charity Organization Society for financial assistance.

In the meantime, the man continues to roam at freedom, using the street cars and telephones, handling money as he sees fit, and living in the same sordid, unhealthy surroundings in which he was originally found.

This case well illustrates the urgent need of a national leprosarium where these unfortunates can find a permanent refuge and the community be spared the presence of an unsightly, mutilated and incurable human being awaiting the final call.

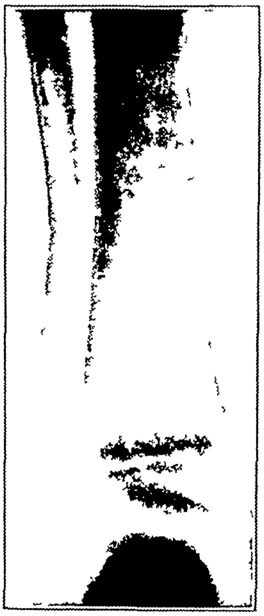
718 North Howard Street.

AN UNUSUAL FRACTURE OF BOTH BONES OF THE LEG

Charles Ryttenberg, M.A., M.D., Port Chester, N. Y.
Associate Surgeon, the United Hospital

Lester B., boy, aged 5 years, while crossing the street, was struck by the mudguard of an automobile, and knocked down. The blow was a glancing one, as the driver in endeavoring to avoid striking the child ran his machine on the sidewalk.

Examination of the child a few minutes after the accident revealed a slight abrasion over the inner side of the right arm and refusal of the child to stand on its feet. The only subjective symptom was pain above the left ankle. The examination of the left lower extremity showed no dislocation at any joint. There were no swelling, no false motion, no ecchymosis, no crepitus. Movements at the ankle and knee were normal. Slight tenderness was present at the junction of the lower and middle thirds of the leg. Motion transmitted upward by striking against the heel elicited tenderness at about the same place. This transmitted tenderness was not a very marked sign. There was not sufficient reason to suspect a fracture, so a wet dressing was applied, and the child kept in bed. When seen the next day, the symptoms were practically unchanged: no swelling, no ecchymosis, no false point of motion and no crepitus. In fact, the only symptoms were refusal of the child to stand on the leg, slight tenderness at the junction of the lower and middle thirds of the leg and slight tenderness transmitted by pressure against the heel.



Oblique fracture (incomplete) of tibia; greenstick fracture of fibula.

On account of the peculiar character of the case, a Roentgen examination was made. The findings were unexpected. There was an oblique incomplete fracture of the tibia in the lower third of the bone, extending from the inner side upward and outward to within about an eighth of an inch of the outer side. At a point directly opposite the fracture of the tibia there was a marked inward bowing of the fibula, strongly suggestive of a greenstick fracture.

The leg was immobilized in plaster without any attempt being made to correct the deformity of the fibula. An uneventful recovery followed in three weeks, with complete restoration of function.

A View of Life.—There is no such thing as a common, a humdrum or a sterile life unless we make it so ourselves. 'The rainbow and the rose,' says my author, 'will give their colors to all alike. The sense of beauty that is born in every soul pleads for permission to remain there." If we will but look for it there is something ennobling and uplifting in every vocation to which a man can put his hand. Every activity of life has its material aspect and its spiritual aspect. It has its result in visible accomplishments and it also has its result in invisible mind building, will-building and intellectual enjoyment.—Nicholas Murray Butler.

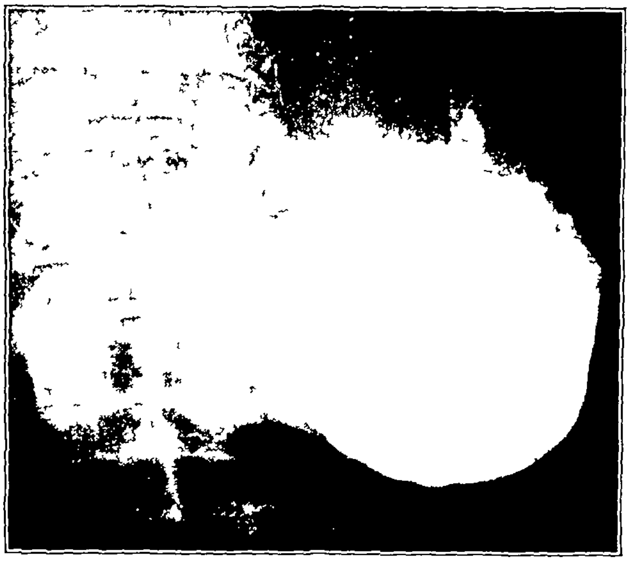
TRAUMATIC RUPTURE OF THE STOMACH, WITH RECOVERY

Alanson Weeks, M D, San Francisco
Chief Surgeon, Emergency Hospital Service

The patient, a man, aged 35, was brought to the Central Emergency Hospital at 6 20 p m , Feb 19, 1916 He was examined by Dr Edmund Butler, the surgeon on duty, who made a record of the following findings, and notified me of the necessity for immediate operation

A short time before, the patient, while driving his automobile, ran into a moving street car, striking the upper abdomen against the steering wheel with great force Examination showed the patient conscious, with very severe pain in the epigastric region, lacerated wound of the chin, contusion of the scalp, abdomen flat and rigid (boardlike), and extremely tender, liver dulness present, no dulness in flanks, no nausea or vomiting, and no blood in urine

A diagnosis of rupture of the bowel was made, and operation performed immediately A midline epigastric incision was made The preperitoneal fat was hemorrhagic, the posterior sheath of the rectus was ruptured, there was no gas or blood when the peritoneal cavity was opened, but when the stomach was lifted into the wound, gas and blood escaped from the region of the pylorus One inch from the pylorus the stomach was ruptured through the entire thickness, from the lesser to the greater curvature on the anterior, and through all but the peritoneal coat of the posterior surface, from the lesser curvature, more than half way across, to the greater curvature It was rather difficult to make out the exact nature of the injury, because of the fact that the mucous membrane and muscular and peritoneal coats were separated in the region of the wound There was marked hemorrhage from the torn edges The rupture of the posterior wall was closed through the anterior opening, with a continuous catgut suture, in one layer, the anterior wall was closed with a continuous catgut suture in two layers A rubber tube drain was placed to the region of the tear There was no other bleeding in the abdomen The patient received 1,000 c c of normal salt solution intravenously on the table



Roentgenogram of stomach two hours after eating

He was returned to bed, and at 12 30 had a pulse of 104, respiration 22, and was resting comfortably Continuous glucose bicarbonate drip was given by bowel for four days He required but two hypodermics for pain, following the operation Small amounts of water by mouth were started, February 22 and February 23 he was allowed small amounts of malted milk On the 24th, he had an even temperature, and the pulse was 88 and the respiration 18 Recovery was uneventful He walked from the hospital, Feb 28, 1916, and was driving his car and attending business two weeks from the date of injury Two months after the operation he is evidently in perfect health

The accompanying roentgenogram of his stomach speaks for itself Dr Howard E Ruggles makes the following report of his Roentgen findings "Stomach high and central, with dilated cardia and body, and a persistent defect in the antrum 2 inches inside the pylorus Also, persistent contraction of the duodenal cap, which *never filled completely*, and which emptied rapidly At two hours after eating there was still one-third residue in the stomach, and at six hours the stomach was entirely empty"

STRICTURE OF THE ESOPHAGUS

REPORT OF A CASE

Walter M Brunet, M D, Lynchburg, Va

History—Negro, aged 35, laborer, about sixteen months ago swallowed an ounce of concentrated lye by mistake, thinking it was water, with the usual result of the ingestion of such material He was seen shortly after the accident by a physician in the country near his home, who administered demulcents for the burned condition of his mouth and throat

The acute symptoms subsided after several days, and he felt no ill effects until some weeks after the accident He first noticed that if he took any liquids in a hasty manner he would regurgitate some of them, and if he ate solid food of any kind without chewing thoroughly (fletcherizing) he would expel them

This condition increased for about a year, and at this time he consulted a nose and throat specialist who referred him to a general practitioner for treatment The doctor dilated the stricture on several occasions, using flexible graduated bougies, and the patient states that he was very much improved by the procedure and could eat with less discomfort After this he did not consult a physician for a year

Present Illness—The patient states that while in the act of drinking lemonade he swallowed a small lemon seed, and it "stuck in his throat," and he was unable either to swallow it or regurgitate it

He was seen shortly after the accident by two physicians, and both attempted to dislodge the obstruction by bougies, but without success The man's thirst was intense, as the heat during this period, June, 1915, was extreme, and the man was unable to retain any fluids taken by mouth About twenty-four hours after the accident he came to this city and consulted a nose and throat specialist, who referred him to me

Physical Examination —The patient was fairly well developed and well nourished, and was very weak and exhausted in appearance, owing to the torrid weather and lack of fluids At the time of this examination he had had no fluids for over twenty-four hours

He was given water in small quantities, and a string was tried, but after retaining them for a few moments they would be ejected Then a small olivary tipped bougie was passed, and it met an obstruction about 14 inches from the teeth After the patient had been subjected to this torture for some time he was sent to a roentgenographer for an examination

A roentgenogram was taken after the ingestion of a small quantity of bismuth, and this showed the esophagus to be occluded, and the outlines of a lemon seed could be plainly seen

The patient was then sent to the hospital and rectal alimentation resorted to for some hours

Operation—Under general anesthesia a left rectus incision high up under the costal margin was made, and the stomach located and pulled up into the wound and incised The finger was then passed into the cardia, but the constriction was so high up that it could not be palpated A small bougie was then passed into the esophagus from the cardia, and it became obstructed about 12 inches from the latter After several attempts a small uterine sound was successfully passed beyond the constriction, and with this in place a small bougie was passed from the mouth, and on the withdrawal of the sound the bougie was carried into the stomach This was gently pulled all the way into the stomach cavity, and successive sizes passed until a fairly large dilation was obtained

During this manipulation the lemon seed was pushed into the stomach, it was of usual size and was intact from its position in the esophagus

After these manipulations had been carried out, a rubber tube was sutured into the stomach wall after the method of Senn

Postoperative Course—For the first twenty-four hours the patient had a rather stormy course, but after this his condition rapidly improved and at the end of the fourth day he was able to take food by mouth with a fair degree of comfort At the end of the sixth day graduated bougies were passed twice a day, and at the end of the ninth day the tube in the stomach was removed, and the patient left the hospital on the fifteenth day

Since his discharge from the hospital he has kept up the passing of the bougies, which has been about twelve months He eats anything and has had absolutely no trouble with the passage of food through the esophagus

He has now gained 40 pounds and works every day as a section hand on one of the railroads which come into the city

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REPORT OF A CASE OF ACQUIRED HEMOLYTIC JAUNDICE WITH SPLENECTOMY

G A. FRIEDMAN, M D
Attending Physician in Digestive Diseases Vanderbilt Clinic Gastro Enterologist Gouverneur Hospital
AND
ELIHU KATZ, M D
NEW YORK

While a great deal has been written and elaborate studies and experiments have been made to determine the nature of hemolytic jaundice, it was not until 1898, that Hayem,[1] through a study and analysis of cases, first showed that the familial and the acquired types were two entirely separate and definite conditions Since then many experimenters and clinicians have substantiated his conclusions A review of the summary on hemolytic jaundice made in 1915 by Elliott and Kanavel,[2] who were the first in this country to report on splenectomy in the familial form, reveals the fact that a splenectomy was done in but thirteen cases of the acquired type, and that all these cases have been recorded in foreign literature This lack of case reports in the American literature has served as a stimulus for recording the following case

CASE REPORT

History—M T male aged 18 tailor white born in southern Italy eighteen months in this country first came under observation at the Vanderbilt Clinic Nov 9 1915 His parents three brothers and three sisters all of whom are living are in good health There is no history of icterus in the family Aside from the fact that when very young he had a fever that lasted three days, he never had any illness A history of venereal infection could not be elicited He had never used alcohol tobacco or drugs He had been in good general health until eight months previously March 1915 when he noticed that his skin and his eyes were becoming rather rapidly lemon colored In about two days the jaundice was deep he felt drowsy was weak and had to go to bed On the third day he had high fever, sweat a good deal, and had several distinct chills The high fever with the severe chills and sweats persisted for two weeks during which he remained at home and in bed The yellow discoloration of the skin and mucous membranes, however, which had by this time become less intense, was nevertheless quite marked At the beginning of the third week the fever, sweats and chills decreased in severity, and the patient resumed his work at which he remained until his admission to the Roosevelt Hospital, Nov 17, 1915 During this entire period, he had a daily fever of from 99 to 100, which appeared regularly in the afternoon, which was preceded by a slight chill lasting for about five minutes, and which was followed by sweating At no time did he have itching of the skin For a few months prior to his admission to the hospital, in addition to the symptoms mentioned, he complained of a heavy feeling distention, and tenderness in the epigastrium These appeared about half an hour after meals and continued from ten to twenty minutes He had, however, no distinct pain, localized or radiating, and no vomiting or nausea His bowels moved daily The stools were yellow, not offensive, of normal consistency, never contained mucus or blood and were never clay colored He had no burning on micturition, and no urgency or frequency of micturition His urine was always of normal color During the eight months of his illness he had lost 6 pounds in weight

Physical Examination—When examined his pulse was 72, respiration 18, and temperature 100 His nutrition was fair The skin and visible mucous membranes were distinctly icteric and there was a slight acne rash on the back of the chest The tongue teeth, pharynx, tonsils and eyes were normal The heart and lungs were negative The abdomen was relaxed and there was slight tenderness in the epigastric region especially to the left of the midline The liver was not palpable and on percussion did not seem to be enlarged The spleen however, was distinctly enlarged, the sharp inner border being felt near the midline and reaching almost to the umbilicus, and the lower pole being 4 inches above the crest of the ilium The consistency was about normal, the surface smooth, and not tender The genitalia, extremities and reflexes were normal

Laboratory Examinations—Nov 9, 1915 the blood examination showed hemoglobin 68 per cent erythrocytes 4,500 000, and leukocytes 4,200 The differential count of 200 white cells showed polymorphonuclears 78 5 per cent small lymphocytes 12 5 per cent, large mononuclears 4 per cent, eosinophils 2 per cent, basophils 0 5 per cent, and transitional cells 1 5 per cent Slight poikilocytosis was present and the crenation of the red blood cells was marked No pigmented or other abnormal erythrocytes were found A careful and repeated search for malarial plasmodia proved negative Blood withdrawn for the Wassermann reaction also gave negative results but tests for bilirubin in the blood serum were strongly positive

Gastric analysis made, November 10, after a test breakfast, showed free hydrochloric acid 40 and a total acidity of 60 There was no blood in the extracted contents but a very slight trace of bile was present An examination of the stool made the same day showed the feces to be normal in color and consistency Microscopic examination revealed a large quantity of cellulose with a few starch granules No fat globules or ova were found The particles were heavily tinged with bile

Successive daily analyses of the urine gave negative reactions for albumin sugar and bile The urobilinogen and urobilin tests were repeatedly strongly positive Microscopically the urine was continually negative

November 15 the patient was referred to Dr Mortimer Warren, pathologist to the Roosevelt Hospital who reported as follows Blood count showed erythrocytes 4,200 000 with a hemoglobin of 78 per cent The white blood cells totaled 4 200 with a differential count of polymorphonuclears 75 per cent, lymphocytes 15 per cent, large mononuclears 1 per cent, transitionals 5 5 per cent eosinophils 3 5 per cent The color index was 0 9 per cent Anisocytosis and poikilocytosis were present There was no polychromatophilia or granular basophilia By vital staining 16 per cent of the red blood cells showed granulation A few microcytes and blood platelets were found, but no parasites The average size of twenty dried smear red blood corpuscles measured 7.2 by 5 8 mm The volume of the red cells was 31 per cent The resistance of the red cells to hypotonic salt solution was determined, and somewhat diminished values were obtained, the minimum being 0 45 per cent, and the maximum 0 3 per cent The blood serum was orange colored, and responded to the test for bilirubin Auto-agglutination and isohemolytic tests were negative The urine examined at this time contained no bile, but gave distinct reactions for urobilinogen and urobilin

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[1] Quoted from Krumbhaar (Footnote 7)

[2] Elliott and Kanavel Splenectomy for Hemolytic Icterus Surg Gynec. and Obst 1915 xxi 37

Diagnosis—Diagnosis of acquired hemolytic jaundice was made The chronic enlargement of the spleen, the acholuric nonobstructive jaundice not causing pruritus, the absence of bile from the urine and the presence of bilirubin in the blood serum the positive reactions for urobilin and urobilinogen in the urine the anemia, and the granulation of the red blood cells with their slightly increased fragility to hypotonic salt solutions all pointed to this condition From the fact that there was no hereditary basis for the icterus, and from the late and rather sudden onset, it was evident that the case belonged to the acquired type

Treatment—Although roentgenotherapy was considered, a splenectomy was advised This was done at the Roosevelt Hospital, Nov 23, 1915, by Dr Charles Peck, assisted by Dr Street Under ether anesthesia an incision was made along the left border of the left rectus muscle from the rib margin to the umbilicus Palpation of the gallbladder, gallducts, liver, stomach and pancreas was negative The spleen was considerably enlarged, firm, but not indurated, and fairly free from adhesions except along its posterior border and to a moderate extent at the upper pole The adhesions were freed allowing the delivery of the spleen forward The pedicle of the spleen was then ligated and the spleen removed It weighed 800 gm The wound was then closed in the usual manner The operation was well borne, and the patient made an uneventful recovery It is interesting to note that the icterus began to disappear immediately after the operation and was almost entirely gone at the end of a week Four weeks later the patient resumed his work

Pathologic Report—This report was made by Dr Mortimer Warren The spleen measured 17 by 10 by 7 cm On macroscopic examination it was found to be soft and flabby It cut easily and the cut surface presented a dark red, rather granular appearance The trabeculations stood out prominently Microscopic examination showed that the capsule was not thickened and that the trabeculae were not prominent The follicles varied in size and there were areas of considerable extent without any follicles some having disappeared Occasionally a follicle presented a marked activity, showing a central cluster of large mononuclear cells analogous to the germinal centers of lymphoid nodes The follicular arterioles were not thickened The lumina in some instances appeared narrow as if compressed, but it was impossible to correlate the disappearance of a follicle with any change in the artery In general the small arteries stood out prominently more by contrast with the surrounding elements than by an increase in size The pulp consisted largely of red blood cells The peculiar pulp cells were scanty There was no evidence of proliferation or adventitial myeloid transformation aside from a very occasional eosinophilic polymorphonuclear leukocyte in the pulp As a rule, the sinuses were empty and compressed Here and there one was widely distended The striking feature was the interstitial suffusion with red blood cells There was no phagocytosis On his findings Dr Warren made the diagnosis of interstitial congestion of the spleen Sections of the spleen treated with potassium ferrocyanid and hydrochloric acid showed an unusually small amount of iron-containing pigment

Results—The results obtained by the splenectomy were striking Two days after the operation, November 25, the white blood cells rose to 24 000 The polymorphonuclear leukocytes were 80 per cent November 29 Dr Warren reported as follows Hemoglobin 88 per cent, red cells 5 120 000, the color index being 0 9, total number of leukocytes 11,000 the differential count of 300 cells showing, polymorphonuclear leukocytes 73 6 per cent lymphocytes 14 6 per cent, large mononuclears 0 3 per cent, transitionals 7 3 per cent, eosinophils 3 per cent, and basophils 1 2 per cent There was no anisocytosis or poikilocytosis The vital staining showed few granular or reticulated red cells No microcytes were seen, but large masses of platelets were found The auto-agglutination and the isohemolytic tests were again negative The resistance of the red blood cells was for the minimum 0 5 per cent and for the maximum 0 35 per cent The urine contained urobilin but no urobilinogen

December 20, about one month later, the blood count showed hemoglobin 80 per cent, the total count of red cells being 5,440,000 The white blood cells numbered 18 600 the differential count being polymorphonuclear leukocytes 70 per cent, small lymphocytes 16 per cent, large mononuclears 3 per cent, eosinophils 2 5 per cent, basophils 1 per cent, and transitionals 7 5 per cent No large lymphocytes were seen A urinalysis at this time showed an absence, both of urobilinogen and urobilin December 29, the hemoglobin was again 80 per cent, and the red cell count was 5,500 000 The number of white cells dropped to 5,400 the differential count being polymorphonuclears 47 5 per cent, small lymphocytes 39 per cent, large lymphocytes 0 5 per cent, large mononuclears 2 per cent, eosinophils 6 per cent, basophils 0 5 per cent and transitionals 4 5 per cent The resistance of the red cells was normal, and reticulated or granular red cells were not seen The urine was negative

The patient, when last seen, March 20 1916, had no subjective symptoms, and there was no sign of icterus The blood and urine were normal

COMMENT

Hemolytic jaundice is associated with an increased blood destruction resulting in a somewhat characteristic blood picture and blood findings, an icterus and a splenomegaly The cause for the hemolysis is not at all clear, but recent operative and experimental results have proved that the spleen is an essential, if not the main, factor in the etiology of the disease, but that, as in other hemolytic diseases, pernicious anemia, for instance, many other factors are perhaps involved The liver too, probably, plays an important role Just how the spleen and liver act, however, is not definitely known Vogel[3] believes that the spleen probably acts by bringing the red blood cells more closely into contact with the pulp cells, where there is not so much blood destruction, but, perhaps, the red cells are so affected or sensitized as to render them more susceptible to hemolytic action on the way to the liver, or, more probably, to destruction by the Kupffer cells of that organ The enormous hyperemia in the spleen sinuses, with practically no large phagocytic cells containing red blood corpuscles or blood pigment, the absence of excessive iron deposition in the organ, and evidence of marked stasis of blood with relatively little blood destruction, seem to favor this view

The spleen has been classed with the ductless glands It is said to have an internal secretion the function of which is not yet understood, and, like other glands of internal secretion, it may be removed with apparently no harm One of the special functions of the secretion is believed to be hemolytic, and a hyperactivity of splenic function due to some unknown pathologic condition and resulting in an increased internal secretion, leads to an excessively marked hemolytic action, regardless of whether this hemolysis takes place in the spleen itself, the general circulation, the liver, or elsewhere To this condition Eppinger[4] has given the name "hypersplenism" The hemolysis disappears, or is strikingly altered, when the spleen is removed; furthermore, an extract has been obtained from the spleen that has been described by some experimenters as having hemolytic properties. The evidence for this, however, is still very meager.

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[3] Vogel Karl M Theories of the Etiology of Pernicious Anemia The Journal A M A April 1 1916 p 1012

[4] Quoted from King (Footnote 5)

Another possible explanation of this condition is found in the association of unsaturated fatty acids and hemolysis. It should be mentioned that Eppinger[4] and King[5] have shown that an increase in the unsaturated fatty acids, which are definitely known to be hemolytic, has been found in the blood where there is red blood cell destruction. By splenectomy the amount of these unsaturated fatty acids is reduced. Moreover, in a series of animal experiments, King has found in every case an increase in the total fats and cholesterin in the blood. The latter substances are a protection against hemolytic agents, and their increased quantity may be a protection against hemolysis.

The blood in hemolytic icterus has certain features. Widal and Chauffard[5] were the first to show that there is an increased fragility of the red blood corpuscles. It has been observed, however, that this decreased osmotic resistance to hypotonic salt solutions is not constantly present in all cases, probably owing to the fact that the fragility, depending on unknown factors, changes from time to time. It has also been demonstrated that the fragility may, even though rarely, persist for a long time after the splenectomy has been done. Some authors have reported an increased fragility in other conditions, as in nephritis with severe anemia, but this is a rather unusual occurrence. After a splenectomy the fragility in the acquired type disappears as a rule, but in the successful splenectomies of the familial type performed by Kohn and Roth,[1] the resistance of the red blood cells failed to return to normal. Pearce, Austin and Evans[6] found that after removal of the spleen the resistance of the red blood cells is increased.

In the acquired form of hemolytic jaundice the phenomenon of auto-agglutination has been described by Widal, Abrami and Brulé.[1] This they have found to be positive in every case of the acquired type, and negative in all congenital cases. In the case reported, however, there was no auto-agglutination either before or after the operation. In some rare instances the blood serum may contain isohemolysins.

Microscopic examination shows an increased number of microcytes and of reticulated or granular red blood cells brought out by the method of vital staining. Chauffard[1] first called attention to this in the congenital type, but their presence has been shown also in the acquired type. Normally there is 1 per cent of reticulated red cells in the blood. In hemolytic jaundice it may be increased from 5 to 20 per cent. The increased number of reticulated red corpuscles is generally considered a sign, not of excessive blood destruction, but rather of a hyperactivity of blood formation.

The anemia in hemolytic icterus is not, as a rule, severe. In an analysis of 158 cases of both types of hemolytic jaundice in which blood counts were made, Krumbhaar[7] found that fifty-five belonged to the acquired form and 103 to the congenital or familial type. The average red cell count of the fifty-five acquired cases was 2,032,200; the counts ranged from 1,000,000 to 4,500,000; ten cases showed a count which was below 1,000,000. In twenty-seven the count was below 2,000,000, and in only four cases was it over 4,000,000. Pearce[1] and his co-workers have shown that after splenectomy in dogs a definite and prolonged anemia is produced. After splenectomy in hemolytic jaundice, however, the anemia disappears. It seems probable that the removal of a spleen that has undergone some pathologic change is followed by entirely different results from those which follow the removal of a normal spleen.

The chronic slight icterus so characteristic of the disease is the direct result of the destruction of the blood. The manner in which this jaundice is produced has been thoroughly explained. It is due to the obstruction in the bile passages caused by the extreme viscidity of the bile. The sequence in which this occurs is briefly as follows: By whatever agents produced, the red blood cell is destroyed with the liberation of the hemoglobin. This is then split into two parts; first, the iron-containing portion, or hematin, which is carried to the liver (Kupffer cells), bone marrow, kidney and other organs; second, the pigment-containing portion, or hemochromogen, which is taken up and excreted by the liver as bilirubin. Thus there is an increased formation and excretion of the bile pigments with an increased viscidity of the bile, which causes an obstruction to the flow of the bile in the smaller ducts. Reabsorption of the bile takes place, leading to the production of jaundice. The bilirubin may be demonstrated in the blood serum. The bilirubin in the intestines is converted into urobilinogen by the reducing action of the intestinal bacteria. This is absorbed and excreted by the kidneys. Urobilin and its antecedent, urobilinogen, may be demonstrated in the stools, and as has been suggested by some in the duodenal contents.

The amount of blood destruction has been estimated by the amount of urobilin and urobilinogen in the urine and in the stools. Eppinger[4] assumed that one molecule of urobilin represented one molecule of destroyed hemoglobin. Addis,[8] however, has described a method for determining accurately the quantity of urobilin and urobilinogen excreted in twenty-four hours.

The splenomegaly is one of the principal characteristic features of the disease. The findings in the spleens, both in those removed by operation and in those which were obtained at necropsy, showed very little proliferation, if any, of the connective tissue. There was frequently great loss in the number of the follicles, and in a majority no germinal centers were to be seen. The splenic sinuses were dilated. Constant infiltration of the pulp with red blood cells was perhaps the most characteristic feature noticed. The endothelium of the blood vessels was proliferated and was filled with coarse hemosiderin. On necropsy nothing definite was found. The liver, however, showed a deposit of pigment, and this was also seen in the kidney and bone marrow. Eppinger[9] showed the presence of an enormous hyperemia in the spleen sinuses of pernicious anemia, as well as in hemolytic icterus. Pribram[10] has pointed out the fact that stasis of blood in the spleen, as caused by chronic passive congestion, is associated with an increased destruction of red blood cells He also showed that urobilinuria could be easily caused by inducing congestion of the spleen He therefore associated increased blood destruction, anemia and urobilinuria with stasis of the spleen

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[5] King John H Studies in the Pathology of the Spleen Arch Int Med August 1914 p 145

[6] Pearce Austin and Evans Reactions of Hemolytic Serum to Various Intervals After Splenectomy Jour Exper Med 1912 xvi 363

[7] Krumbhaar E B Classification and Analysis of Clinical Types of Splenomegaly Accompanied by Anemia Am Jour Med Sc 1915 cl 227

[8] Addis and Wilbur Urobilin Its Clinical Significance Arch Int Med February 1914 p 235 Addis A Working Hypothesis of Hemoglobin Pigment Metabolism Arch Int Med March 1915 p 413

[9] Eppinger H Zur Pathologie der Milzfunktion Munchen med Wchnschr 1913 xxxv 1952

[10] Pribram Hypersplenische Hamophtisen und Stauungsmilz Wien klin Wchnschr 1913 xxvi 1607

In the treatment of hemolytic icterus, iron, arsenic and the Roentgen ray have been used, but in most cases gave little benefit Jona[11] has reported a case of the acquired type in which Roentgen-ray treatment resulted in a cure, and strongly urges that this treatment be tried before attempting the removal of the spleen He knows of no previous cure, however Splenectomy gives the best results

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TESTS BY BARÁNY METHODS

DEMONSTRATING NEURAXIAL DIFFERENTIATION OF THE FIBERS FROM THE HORIZONTAL AND THE FIBERS FROM THE VERTICAL SEMICIRCULAR CANALS *

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While contributions which add something to our previous store of knowledge need no excuse for their presentation, nevertheless in deference to the tendency of many to query as to the so-called practical values, it is worth while sometimes to indicate what service to medicine may be the outcome of a somewhat intricate clinicopathologic study Researches by the Barany methods, especially when these were complemented by necropsies with microscopic investigation, have furnished facts of importance in diagnostic symptomatology First, the cause of vertigo, that symptom which so frequently confronts not only the neurologist and otologist but also physicians at large, is often a perplexing problem No matter where the primary seat of the affection which causes vertigo may be situated, whether in the stomach, kidney, liver, pancreas, tonsils, or the brain outside of the vestibular apparatus, the resulting toxemia, the abnormal nervous stimulus, or the cardiovascular disorder does not produce vertigo until the vestibular apparatus — the labyrinth and its associated pathways and encephalic centers — is involved The Barany tests furnish us with the means for studying this vestibular apparatus Secondly, these tests enable us to say with more positiveness that an intracranial tumor, abscess or other lesion is situated in the third ventricle or in the cerebellopontile angle, is limited to the pons or the cerebellum or is labyrinthine

Cajal has shown histologically that fibers from the vestibular portion of the eighth nerve enter Deiter's nucleus and continue from the inferior cerebellar peduncle into the cerebellum itself This tract has been generally recognized and accepted We believe that (1) this path includes the fibers from the horizontal semicircular canals exclusively, and (2) the fibers from the vertical canals have an entirely different course The former are confined to the oblongata, while the latter ascend into the pons

In thirty-two cases in which the labyrinths themselves and the eighth nerves were normal and the horizontal canals gave normal reactions, the vertical canals failed in some or all of the well known responses That the labyrinths themselves were normal was made probable by the presence of perfect hearing, and corroborative evidence of neuraxial lesions was additional confirmation In five cases stimulation of the vertical canals produced no nystagmus, no vertigo, no past pointing and no falling, and yet violent projectile vomiting occurred This showed that the vertical canals themselves were functionating, in fact, there was even a hyperactive response of the tenth nucleus to the stimulation of the canals In one case in which the lesion was clearly thrombosis of the right posterior inferior cerebellar artery, the right horizontal canal failed to respond normally, whereas reactions from the right vertical canals were normal

REPORT OF CASE

History—C M D, a woman, aged 36, admitted to the University Hospital to the service of Drs Mills and Spiller, Aug 12, 1915 having been referred by Drs S D Ludlum and J W McConnell, gave a history of vertigo, without associated tinnitus, of eight weeks' standing Two weeks after the onset vertigo was so marked that she was not able to walk She staggered both to the right and to the left At this time she began vomiting without precedent nausea, and continued to do so at intervals until her death, two weeks after her admission

The fourth week of her illness the patient noticed that the right limbs were becoming weak This impairment increased until at the time of admission she could scarcely move either the right arm or leg Five weeks from the time of onset she began to have severe headaches In the sixth week she noticed that her sight was becoming bad and grew steadily worse The family history was negative except that one uncle had had a brain tumor

Examination—The following notes were made immediately after the admission of the patient

The right eye shows slight ptosis, some weakness of the external rectus, of the superior and inferior obliques and internal rectus The left eye shows ptosis and weakness in all ocular movements Movements of the musculature of the third nerve are almost completely abolished Conjugate movements are lost in all directions The pupils are unequal the right being larger They react to direct stimulation but the convergence response is questionable Dr B Baer reports marked papilledema, worse in the left eye

The patient lies in bed in the supine position with the head slightly inclined to the left She has a typical right-sided hemiplegia, face, arm and leg, with moderate hypertonicity Superficial and deep reflexes are all increased Foot clonus is absent Plantar stimulation gives plantar flexion No paralysis is discoverable in the left half of the body, but the left finger-to-nose test shows a distinct ataxia, the uncertainty being of small excursion Sensation for pain and touch is everywhere normal Speech is slow and dysarthric, but not sufficiently so to make it inarticulate The patient answers questions sensibly and performs commands so far as she is physically able The blood examination is normal

The patient died suddenly just ten weeks after the onset of her illness

Before giving the results of the ear tests, it might be well to recall a few well known facts regarding them The semicircular canals may be stimulated by turning an individual in a smoothly revolving chair, or by douching the ear with either hot or cold water When the individual is turned with the head in the upright position, the horizontal canals are stimulated When he is turned with the head forward or backward, the vertical canals are stimulated Naturally the turning involves the labyrinths of both sides Douching, on the other hand, influences only one ear Douching the ear with the head upright stimulates the vertical canals, whereas douching with the head either forward or backward stimulates the horizontal canal

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[11] Jona G Policlinico Rome 1916 xxiii No 1 abstr, The Journal A M A Feb 26 1916 p 696

Read before the American Neurological Association, Washington D C May 8 1916

Tests—On looking to the right, this patient showed a marked horizontal nystagmus to the right On looking to the left, there was a horizontal nystagmus to the left not so marked Looking upward produced occasional vertical nystagmus upward

Turning to the right, with head upright, produced a rotary nystagmus to the left, instead of the normal horizontal The remarkable feature of this turning was that the nystagmus lasted thirty-four seconds, which is unusually long as compared with the normal twenty-six, and yet no vertigo was produced That there was any nystagmus at all is remarkable, because turning to the left produced no nystagmus, but a *conjugate deviation* to the left Turning to the left also failed to produce vertigo

Douching the right vertical canals gave no reactions Douching the right horizontal canal caused a conjugate deviation to the right This became a fairly good horizontal nystagmus to the left when the patient was told to look straight ahead, or to the left

Douching the left vertical canals gave a similar reaction, namely, after the normal length of time (forty seconds) there was a marked conjugate deviation to the left, with a developed oscillatory nystagmus to the right, when the patient made the effort to look to the right

Douching the left horizontal canal caused conjugate deviation to the left after thirty seconds, which became an irregular horizontal nystagmus to the right when the patient was told to look to the right, and there were irregular twitches for a while which settled back again into a conjugate deviation to the left

Stimulation of the right horizontal and the left vertical canals produced no vertigo Considerable dizziness, however, resulted from stimulation of the left vertical canals

Incidentally the following difficulties were encountered in examining this patient Her mentality was poor, her speech was difficult to understand, and the pointing tests were impossible because of paralysis of the right upper extremity, and marked incoordination of the left upper extremity

Dr Jones reported in writing to Drs Ludlum and McConnell "The results of the Barany tests indicate a lesion of the upper portion of the pons and the junction of the cerebral crura at the point where the cerebral fibers reach the region of the posterior longitudinal bundle The oblongata and lower half of the pons appear uninvolved"

Dr William G Spiller makes the following report of his macroscopic and microscopic examination

"The tumor extends from the uppermost portion of the cerebral peduncles, through the pons, and into the cerebellar lobe It is confined to the left half of the brain stem throughout It causes much enlargement of the left side of the cerebral peduncles, and implicates almost all of this side In the upper part of the pons the posterior longitudinal bundle on the right side is well preserved, but the outer portion of the posterior longitudinal bundle on the left side is much degenerated The tumor in the upper part of the pons is confined to the left tegmentum, and implicates almost all of this portion of the tegmentum The same is true of the middle portion of the pons The tumor greatly compresses the fourth ventricle, and almost closes it by displacement of the surrounding tissue It does not invade the medulla oblongata, but at the level of this structure it is confined to the white matter of the left cerebellar lobe It is a glioma"

COMMENT

A study of the data obtained by the ear tests and necropsy indicates certain definite facts as to the vestibular pathways in the neuraxis The experiments demonstrated that the tracts from all the semicircular canals except the right verticals, through the vestibular nuclei to the nuclei of the ocular nerves were open The specimen showed that the Deiters' nucleus group (Deiters' nucleus proper, the triangular nucleus and von Bechterew's nucleus) was unaffected by the lesion, as were also the entire oblongata and the lower part of the pons

Let us recall the peculiar response of conjugate deviation This ocular movement may be regarded as the slow component of nystagmus For it to occur it is only necessary that the stimuli shall pass from the ear through the posterior longitudinal bundle to the nuclei of the sixth nerve and of the third nerve or rather of that part of this nerve which innervates the internal rectus The conjugate deviation, therefore, results from stimulation of the ear, but this normally is converted into a nystagmus by impulses from the cerebrum which tend to call the eye back to its usual position, that is, if the cerebro-oculonuclear tracts are open It follows, therefore, that if, as in this case, the response is only a conjugate deviation some lesion is interfering with the transmission of cerebral stimuli to the nuclei of the ocular nerves affected It has been shown by necropsy that such a lesion was present

It may be of interest to note in this connection that one fully anesthetized, when the semicircular canals are stimulated, shows only a conjugate deviation and no return movement

Let us turn now to an explanation of the vertigo in the light of our premortem and postmortem findings We believe that the ear stimulus which produces vertigo passes to the cerebrum through the *cerebellum* While the paths which carry the vestibular stimuli through the cerebellum to the cerebrum are not demonstrated absolutely in all their extent, the facts at our disposal appear to indicate that they are received by the cerebellum through the inferior cerebellar peduncle from the horizontal canals and the middle cerebellar peduncle from the vertical canals, and after completing their cerebellar itinerary, pass to the cerebrum by way of the superior cerebellar peduncles In the present case ear stimulation failed to produce the normal vertigo from all the semicircular canals except the left verticals Clearly, therefore, there was obstruction somewhere in this vestibulocerebellocerebral pathway concerned with the stimuli causing vertigo As there was present a conjugate deviation from the stimulation of the same canals or tracts, the lower neuraxial pathways appeared open To explain this absence of vertigo the logical place of destruction was at the decussation of the superior cerebellar peduncles The necropsy studies showed involvement of the superior cerebellar peduncles, which have been demonstrated to contain tracts which pass to the cerebrum from the cerebellum

With regard to the spontaneous nystagmus upward, this case confirms our previous experience that such a nystagmus is pathognomonic of a neuraxial lesion, either destructive or due to pressure

The right vertical canals failed to produce any reactions It follows, therefore, that the neuraxial fibers from these canals were involved, and as the lesion was in the upper portion of the pons, that these fibers must reach at least as high as the site of this lesion That the lesion extended further down on the left side suggests that the fibers from the right vertical canals decussate to the opposite side

In our experience, interruption of the impulses from the vertical canals is produced by tumors of the cerebellopontile angle, internal hydrocephalus causing pressure on the floor of the fourth ventricle, and intracerebellar tumors causing pressure on the pons

Finally, we are confident that the fibers from the horizontal canal and the fibers from the vertical canals have separate pathways in the neuraxis That the horizontal canal fibers are confined to the oblongata and enter the cerebellum through the inferior peduncle and that the vertical canal fibers ascend into the pons and enter the cerebellum through the middle peduncle, however, we believe to be highly probable, but feel that our evidence to date is not sufficiently large to indicate with confidence the exact course of these fibers

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THROMBOSIS OF BRACHIAL ARTERY

RELIEVED BY INCISION AND MASSAGE OF THE ARTERY

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Jan 17, 1912, the patient, a street car conductor, was on the rear platform of a standing car, when suddenly the building in front of which his car was standing was demolished by a natural gas explosion A shutter was hurled by the explosion and struck him on the flexor side of the left arm, above the elbow He also received minor cuts and bruises about the face and lost consciousness

On regaining consciousness his left hand felt numb and was cold When I saw him about a half hour later, it was quite evident he had suffered considerable psychic shock He was pale, cold and covered with clammy perspiration Examination of the left arm revealed considerable ecchymosis on the inner side of the arm just above the elbow The skin was tense but not pulsating The fingers were cold, and most careful examination failed to disclose any pulsation in the radial artery

The patient was sent home, the arm wrapped in cotton and hot water bottles were applied After three hours another observation of the arm showed no improvement The numbness seemed worse and the hand was still cold and pulseless The patient was then sent to a hospital

I supposed at that time I was dealing with a thrombus, consequently, my purpose was to expose the artery, locate the lesion, clamp the artery above and do a thrombectomy By a 3-inch incision just above the elbow to the inner side of the biceps the brachial artery was exposed to touch without difficulty, and at a certain point (I would judge about 2 inches above the bifurcation), good distensile pulsation could be felt Tracing the artery downward from this point was easily done, and the impact on the artery was felt with each pulsation, but the artery did not alternately dilate and contract It was evident that here was a thrombus

Beginning at the most distal point on the artery within reach of my finger I firmly stroked the vessel proximally After three or four strokes the intern who had held his finger constantly over the radial suddenly announced that good pulsation had returned After waiting for several minutes to see if the radial pulse was maintained and noting that there was no change in its vigor, I closed the wound

On the following morning both radials beat with equal tension all numbness was gone and the hand was warm From this time recovery was uneventful

Evidently I broke up a clot which was carried further on In the forearm the collateral circulation is so free that the complete occlusion of either radial or ulnar offers practically no barrier to good nourishment of the hand

In the past few years, surgery of the arteries has made such advances that one is no longer justified in regarding a damaged artery as a *noli me tangere* In this case the dislodgment of the clot and reestablishment of the radial pulse rendered further interference unjustifiable If the clot had not been dislodged, my purpose was to make a clean incision in the brachial and remove it

Evidently the syncope following the accident with its consequent low blood pressure and a slight damage to the intima formed a combination of conditions favorable to thrombosis I infer that the damage to the intima must have been very slight for, in the presence of any considerable alteration of the intima, thrombectomy has succeeded in restoring the circulation only temporarily This patient has now been perfectly well for more than four years

My object in reporting this case is to emphasize the necessity of prompt action in the operative relief of thrombosis After a thrombus has lodged long enough to cause changes in the intima, its removal will only result in another thrombosis Of course, massage of an artery and breaking up of a clot in a location where small emboli would be carried on and might cause damage would be inexcusable In this case, however, either the clot was dissolved, or it obstructed such small vessels that it offered no barrier to complete collateral circulation

350 Ludlow Avenue

THE COMPARATIVE RESISTANCE OF BACTERIA AND HUMAN TISSUES TO CERTAIN GERMICIDAL SUBSTANCES *

ROBERT A LAMBERT, M D
NEW YORK

It is recognized that an ideal germicide for use on infected tissues of the body is one that will kill the pathogenic micro-organisms present without at the same time injuring the tissues

Although clinical observations have led to fairly definite conclusions regarding the irritating or nonirritating qualities of many germicides, it is obviously not practicable to carry out on the living body—in human beings, at least—experiments to determine accurately the relative resistance of tissues and bacteria to chemicals of any kind

It is hardly necessary to state in this connection that the irritative action of any germicide is dependent on the injury to the cells which it causes

Since in the growth of tissues in vitro by the method of Harrison, Burrows and Carrel we have, as regards cell life, conditions closely analogous to those in the body, it occurred to me that this technic might be utilized for investigating the problem, just suggested of finding an ideal germicide

In carrying out this idea, the method has consisted in subjecting infected and noninfected tissues removed from the body to the action of various chemicals, including most of the germicides in common use The relative resistance of bacteria and cells was determined by incubating the treated tissues in tissue culture preparations In the clotted plasma both cells and bacteria which survived exposure found a suitable medium for growth In such experiments cells and bacteria are exposed under practically the same conditions as obtain in an infected wound bathed in an antiseptic solution Staphylococcus aureus was the organism used Human tissues were used throughout the experiments, since it seemed that the results would be of more practical value than if the tissues of lower animals were employed

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* From the Pathological Laboratory of the Presbyterian Hospital

It was shown in a previous paper[1] that by the use of a slightly modified plasma medium human connective tissue cells and wandering cells (such as, for example, in lymph glands and spleen) can be cultivated as easily as similar cells of lower animals

A more detailed report of the technic of these experiments will be published elsewhere

The accompanying table gives the results obtained so far in testing some of the commoner germicides

It is seen that cells are more easily destroyed than bacteria by all but one (iodin) of the agents used However, in the case of several—mercuric chlorid, sodium hypochlorite (Dakin's solution), potassomercuric iodid, argyrol and phenol—the difference is not great That normal cells should exhibit even this demonstrated degree of hardihood will probably occasion some surprise It is interesting, for example, that no harmful effect whatever was seen from exposure of cells for one hour to 10 per cent alcohol The low bactericidal power of hydrogen peroxid, so popular among the laity, is noteworthy

TESTS OF SOME COMMON GERMICIDES

	Cells Not Killed by	Bacteria Not Killed by	Cells Killed by	Bacteria Killed by
Mercuric chlorid	1 120 000	1 80 000	1 80 000	1 40 000
Potassomercuric iodid	1 20 000	1 10 000	1 10 000	1 5 000
Potassium cyanid	1 6 000	1 2 000	1 4 000	1 500
Sodium hypochlorite*	1 10 000	1 5 000	1 2 000	1 1 000
Iodin	1 2 500	1 5 000	1 1 250	1 2 000
Phenol	1 500	1 200	1 200	1 100
Tricresol	1 2 000	1 500	1 1 000	1 200
Argyrol	1 400	1 250	1 200	1 100
Hydrogen peroxid†	1 1 500	1 200	1 1 000	1 50
Alcohol	1 10	1 5	1 5	1 1

* The sodium hypochlorite solution was prepared according to the method recently described by Dakin (Brit Med Jour 1915 ii 318) who also states that the solution contains a definite calculable amount of hypochlorite (from 0 5 to 0 6 per cent) and that it is free from the harmful impurities in the solutions prepared in the usual way Very favorable results are reported by Carrel and others from the use of the solution on wounds treated in the French military hospitals

† The U S P 3 per cent solution was used The figures indicate the actual amount of hydrogen peroxid present

Iodin, as indicated above, stands out as the one germicide toward which cells were found to be more resistant than bacteria The difference was not striking, but it was possible by the use of a solution of iodin of suitable strength to kill the organisms in infected tissues without affecting more than slightly the growth of cells

Since the ultimate aim in this work was to find an ideal tissue disinfectant, it should be mentioned that iodin, as well as the sodium hypochlorite solution used, possesses the power of rapidly dissolving fibrin—a property which may militate against the use of either of these germicides in healing wounds, for it is recognized that fibrin serves a useful purpose in plastering together wound surfaces, thus facilitating organization, and in forming on the base of an ulcer or other granulating surface a scaffolding on which fibroblasts and sprouting blood vessels may cling

It has been concluded from these experiments that the method of tissue cultures affords a simple direct, and easily controlled method of determining, under conditions analogous to those in the body, the relative resistance of tissues and bacteria to various chemical agents, including the common germicides Of the germicides tested, iodin is the only one which will kill staphylococci in strengths which do not seriously injure tissue cells It is possible, however, that on account of the fibrin-dissolving property of iodin, causing conceivably an inhibition of wound healing, some other substance may be found approaching more closely the ideal tissue disinfectant

New Instruments and Suggestions

NOTE ON AN AUSCULTATORY SIGN OVER THE MANUBRIUM

Louis M Warfield, A B, M D, Milwaukee, Wis

In the routine examination of patients a sign was found on auscultation with the stethoscope on the manubrium which seems to be of some importance and which is not found described, or is found only casually mentioned, in any books on physical diagnosis which have been consulted For over a year now this sign has been noted, and has been helpful in determining whether or not the anterior mediastinum was free from encroachments of any kind, organs or swellings or actual tumor masses

In the normal subject, the anterior borders of the lungs practically unite in the median line beneath the manubrium They cover the trachea and the large arteries and veins which pass through the anterior mediastinum The true space is normally only a potential space filled with loose areolae tissue in which are lymph spaces In the infant the thymus occupies this space in its whole extent, but in the adult this gland is so small that it is often not possible to find even traces of it The posterior part of the space is bounded by the trachea, which lies at a variable depth from the manubrium depending on the size and shape of the chest It may be from 4 to 6 cm from the manubrium

These being the anatomic relations, it is not possible with the most accurate percussion to detect any change in the note from that of the lung at either side of the manubrium Also and this is the important point, auscultation over the body of the manubrium gives a vesicular murmur or at the most the slightly bronchovesicular character which is usually found over the right upper front just below the clavicle

It has been found that any solid or semisolid (edema) mass in the anterior mediastinum changes the respiratory sound from the vesicular to harsh bronchial, and finally to typical high-pitched tubular breath sounds

The cause for this phenomenon is considered to be the interposition of a sound conducting substance between the trachea and the bone I have found this sign most useful and helpful in cases of dilated arch of the aorta, and in cases of Hodgkin's disease when the mediastinum contains enlarged glands At a time when careful percussion reveals no impairment of the note, the breath sounds will certainly be bronchial and may be typical tubular In one particularly instructive case of Hodgkin's disease the sign over the manubrium was typical At operation the surgeon succeeded in removing the mass of glands below the upper portion of the manubrium Auscultation now revealed only a slight prolongation of the expiration over the upper two thirds of the manubrium (edema?) but tubular breathing over the lower third

Tubular or bronchial breathing has been found in (1) persistent thymus, (2) substernal thyroid enlargement, (3) edema of mediastinal tissues, (4) enlarged glands, (5) aneurysm, (6) dilated aortic arch (*a*) acute aortitis, and (*b*) chronic dilatation, and (7) tumor growths

I have been particularly interested in cases of enlarged glands and those with dilated aortic arches Thus far all cases in which the sign has been present have been shown by roentgenograms or by fluoroscopy to have had the condition diagnosed with the stethoscope It is stated in some textbooks on medicine that in aneurysm of the arch the breath sounds over the manubrium are not very audible This I feel sure, is incorrect The error is due to the fact that the loud sounds produced by the closing of the valves of the heart, or by murmurs in the aneurysmal sac, so obscure the respiratory sounds that unless one listens particularly for these sounds he will certainly fail to hear them As a matter of fact in all the cases of aneurysm during the past year I have heard this sign, and in two instances tubular breathing beneath the manubrium drew attention to the diagnosis of otherwise obscure cases It is hoped that others will use this sign and obtain as much help from its presence as I and my assistants have obtained

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[1] Lambert R A Jour Exper Med 1916 xxiv

79 Wisconsin Street

A METHOD WHICH GREATLY FACILITATES THE CULTURE OF THE MENINGOCOCCUS *

M B Cohen, M D, and Louis Markle, B S, M D
Resident in Pathology and Assistant Resident respectively Cincinnati General Hospital
CINCINNATI

The difficulty in isolating some strains of the meningococcus is appreciated by those who have worked with this organism Primary cultures of some strains are easily obtained on human blood agar or Loeffler's blood serum, but others resembling the gonococcus very closely, will grow only on ascites or pleuritic agar Often only one or two colonies are obtained in cultures when many diplococci are demonstrated in control smears Wherry and Oliver,[1] working with the gonococcus found that thousands of colonies could be produced by growth at partial oxygen tension when control aerobic tubes remained sterile or showed only a few colonies

Because of the close relationship of the gram-negative diplococci to one another, it was thought that this method of growth at partial tension might facilitate the culture of the meningococcus Accordingly aerobic partial tension and anaerobic cultures were made of the spinal fluid in a case of epidemic cerebrospinal meningitis on a medium composed of equal parts of the basic sodium phosphate agar described by Martin and sterile pleuritic fluid All tubes were incubated at 37 5 C For the anaerobic cultures the pyrogallic acid method was used The partial tension cultures were made by connecting the culture tube to a freshly inoculated agar slant of *B subtilis* by means of rubber tubing

An average of two colonies appeared on each aerobic tube in twenty-four hours, while hundreds appeared on those grown at partial tension, the anaerobic cultures remained sterile and were discarded after six days Transplants from the partial tension strains would grow aerobically on the same medium but not nearly so luxuriantly as at partial tension No growth could be obtained aerobically on human or rabbit's blood agar or on Loeffler's blood serum, a scanty growth was produced at partial oxygen tension on human blood agar

The fermentation reactions of both the aerobic and partial tension strains were tested, glucose, levulose saccharose, mannite, maltose, lactose and galactose being used with Martin's pleuritic agar as a base Slight acidity was produced in glucose and maltose in twenty-four hours by the partial tension strain and in thirty-six hours by the aerobic one The remaining sugars were unchanged at the end of six days and were discarded These results correspond with the aerobic fermentation reactions of the meningococcus as described by Martin In fermentation tubes in a medium made of equal parts of sugar broths and pleuritic fluid, only glucose was fermented, with the production of a slight amount of acid

Primary partial tension cultures were obtained from six other specimens of spinal fluid in the same case and from eight specimens in another case Growth at ordinary oxygen tension yielded meningococci only four times, and in each instance the growth was meager In the majority of instances cultures were obtained when no diplococci could be found microscopically in control smears Both of these patients recovered after intraspinal injections of antimeningococcic serum, neither patient had any clinical evidences of gonorrhea These facts, together with the fermentation reactions, are sufficient proof of the identity of the organism

Since the strains of the meningococcus isolated in these cases grew best at partial oxygen tension and scarcely at all aerobically, it is evident that many of the organisms are micro-aerophils and only a few are capable of growth at ordinary oxygen tension

In view of these facts, it seems to us that for the cultivation of the meningococcus, growth at partial oxygen tension preferably on Martin's pleuritic agar, should be adopted as a routine

Therapeutics

ILLUMINATING GAS POISONING

ETIOLOGY

Poisoning by illuminating gas is not uncommon Most of the cases are due to suicidal intent and are produced either by the gas escaping through an open jet, or by means of a tube attachment to the mouth (the person breathing the gas by way of the mouth) At other times poisoning may be accidental, owing to the unintentional opening of a stop cock, or it may result from a leak in some part of the piping Poisoning has occurred in houses which are in the vicinity of a broken main from which gas escapes, and workmen seeking to repair such leaks have themselves often been overcome Poisoning may also occur in carelessly conducted illuminating gas plants, where a leak in the system allows enough gas to escape so that the surrounding atmosphere becomes filled with it

PATHOLOGY

In illuminating gas poisoning, the symptoms are due to the carbon monoxid contained in the gas The amount of carbon monoxid in the air need not be great to produce symptoms of poisoning When air contains from 1 to 2 per cent of this gas, inhalations can cause serious symptoms When the content in the air rises to as high as from 10 to 20 per cent, persons exposed can survive only a short time, and if death does occur, as much as from 60 to 80 per cent of the hemoglobin in the circulation will be in combination with the carbon monoxid Even when there is as little as from 0 07 to 0 12 per cent, breathing in this atmosphere for half an hour will render one quarter of the red blood corpuscles incapable of uniting with the oxygen

After inhalation of carbon monoxid, it enters the blood stream and there unites with the hemoglobin, forming a compound called carboxyhemoglobin This gives a bright red or cherry red color to the blood The combination is a stable one and cannot be easily disturbed by the presence of oxygen unless the oxygen is present in large amount and under pressure, in which case the oxygen may drive off some of the carbon monoxid, replacing it It is on account of this close union of the carbon monoxid with the blood that there results insufficient oxygenation, and the symptoms resulting are due partly to the toxic action of the carbon monoxid and partly to air hunger Blood containing carbon monoxid has a characteristic appearance when observed by means of the spectroscope, and this means is used to detect its presence in the blood

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* From the Pathologic Institute of the Cincinnati General Hospital and the Department of Pathology of the University of Cincinnati

[1] Wherry W P and Oliver W W Lancet Clinic Cincinnati 1916 cxv 306

[2] Martin W B M Jour Path and Bacteriol 1911 xv 76

Carbon monoxid has a direct action on the nervous system, first stimulating the central nervous system and then depressing it, with a resultant paralysis The order in which the parts are affected are the brain, spinal cord and medulla Besides this, it also attacks other tissues, such as the muscles and glands, and produces in these very rapidly a considerable amount of degenerative changes that sometimes result in gangrene The attack of the gas is so insidious that often before a person becomes aware of its presence there exists a certain amount of mental depression, if not stupor This is particularly true when the gas is inhaled during sleep Escaping gas is almost always detected by its odor when one is awake

SYMPTOMS

McCombs,[1] who has observed 1,000 cases of illuminating gas poisoning, has grouped the symptoms resulting from the poisoning into three stages, which in a general way may be divided as follows The first stage continues until the patient loses consciousness, the second stage beginning with syncope, ends with apnea, in the third stage the patient is comatose, and respirations have ceased

In most cases, the first symptoms consist of a feeling of discomfort and a throbbing of the blood vessels There is also dizziness, headache, weakness, and sometimes nausea and vomiting Pains in the extremities have occurred, and also muscular twitching The temperature remains normal The pulse becomes full and bounding, and there is a rise in the blood pressure The beginning difficulty in breathing is felt as a constriction around the chest The pupils are widely dilated, and there is a gradual sinking into stupor and finally into unconsciousness As this continues, the respiration is accelerated and stertorous, the skin becoming dusky and the lips and extremities blue This is due to the advancing asphyxia At this time also the temperature may begin to rise On account of the action of the gas on the cortical centers, the control over the reflexes is lost There may even be a loss in the control of the sphincters Tetaniform convulsions may occur at this stage, and this will ultimately be replaced by a marked muscular rigidity in which the jaws also may become rigid The pulse and the respirations both become weaker, and finally there is apnea If the gas is still being inhaled, the poisoning continues, and there occurs sooner or later complete cessation of the heart action as well as of the respiration A characteristic change is the bright red color of the blood, which is also seen as cherry-red markings of the skin, lasting for some time after death

As a rule, convalescence is tardy, and there may result symptoms of a pulmonary or nervous character Loss of memory has also resulted Most of the after-symptoms are referable to the nervous system, and consist of delirium, transient hemiplegia, nervousness, insomnia, various neuralgias, and also glycosuria Complications such as bronchopneumonia have also occurred If the patient survives, all complications usually clear up

TREATMENT

Success in the treatment will depend on how quickly and how thoroughly the carbon monoxid can be removed It also depends on how saturated the blood is with carbon monoxid First, it is usual to resort to artificial respiration with simultaneous stimulation of the heart The artificial stimulation may be either by means of the Silvester or Schafer methods, or it may be carried out by mechanical respiratory devices which force air into the lungs Artificial respiration by intratracheal insufflation through a tube inserted into the trachea, as suggested by Meltzer,[2] can also be used

For stimulation, hypodermic injections of strychnin or camphor in oil may be given, strophanthin may be given, strong coffee may be given by the mouth if the patient is not totally unconscious Physiologic saline solutions may be injected into the rectum by the drip method, or from 300 to 500 c c may be given every three hours subcutaneously into the breast Other substances that can be tried are hypodermic injections of 2 c c of ether, $\frac{1}{100}$ grain of atropin, or 2 minims of epinephrin solution (1 1,000) The body, especially the feet, should be kept warm

If by these means recovery does not take place, or only very slowly, other measures may be resorted to One of these is venesection with the introduction of an amount of physiologic saline solution corresponding to the amount of blood removed

PROGNOSIS

McCombs[1] states that if treatment is resorted to before the appearance of the usual signs of death, almost all patients should recover from the immediate effects of the gas in from forty-eight to seventy-two hours He also cites Edsall, who reported the recovery of thirty-four patients in thirty-nine poisonings, the fatalities resulting from sequelae of the poisoning

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[1] McCombs Am Jour Med Sc October 1912 p 577

[2] Meltzer S J Pharyngeal Insufflation A Simple Method of Artificial Respiration THE JOURNAL A M A May 11 1912 p 1413

Epidemiology of Typhus During the Last Few Years—A recent compilation published by the International Public Health Bureau at Paris shows that a few scattered cases of typhus have been recorded in nearly every country each year for many years The war has brought a recrudescence at the same time that medical science has shown how to prevent its ravages The principal focus of endemic typhus in Europe outside of Russia is Galicia, next comes Poland and the disease is endemic also in certain parts of the Balkans and Turkey in Asia There are also typhus victims each year in Persia northern China and Siberia and cases have been known in Japan In England and Wales there were over 23,000 deaths from typhus between 1869 and 1883 2 249 from 1884 to 1898, and only 390 since then to the end of 1913 France from 1903 to 1913 had a total of 209 deaths from typhus, the seacoast provinces suffered most The Scandinavian countries seem to have escaped most In the recent epidemic in Serbia it is estimated that 135 000 persons died from typhus In Russia the deaths from typhus between 1905 and 1911 ranged each year from 3 639 to 10,500, but there were comparatively very few cases at Moscow and Petrograd In northern Africa the disease always has a foothold but rarely becomes epidemic Egypt has from one to two thousand deaths annually but during the first half of 1915 there were 14 505 cases reported with 3 398 deaths It was at Tunis that attention was first attracted to the louse as the possible conveyor of the disease, confirmed by our own investigators in Mexico, our American endemic focus The records show a total of 56 719 cases and 14 758 deaths in Mexico from 1893 to the end of 1913 tion diagnosed with the stethoscope It is stated in some textbooks on medicine that in aneurysm of the arch the breath sounds over the manubrium are not very audible This, I feel sure, is incorrect The error is due to the fact that the loud sounds produced by the closing of the valves of the heart, or by murmurs in the aneurysmal sac, so obscure the respiratory sounds that unless one listens particularly for these sounds he will certainly fail to hear them As a matter of fact, in all the cases of aneurysm during the past year I have heard this sign and in two instances tubular breathing beneath the manubrium drew attention to the diagnosis of otherwise obscure cases It is hoped that others will use this sign and obtain as much help from its presence as I and my assistants have obtained

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McCombs[1] states that if treatment is resorted to before the appearance of the usual signs of death, almost all patients should recover from the immediate effects of the gas in from forty-eight to seventy-two hours He also cites Edsall, who reported the recovery of thirty-four patients in thirty-nine poisonings, the fatalities resulting from sequelae of the poisoning

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Epidemiology of Typhus During the Last Few Years—A recent compilation published by the International Public Health Bureau at Paris shows that a few scattered cases of typhus have been recorded in nearly every country each year for many years The war has brought a recrudescence at the same time that medical science has shown how to prevent its ravages The principal focus of endemic typhus in Europe outside of Russia is Galicia, next comes Poland, and the disease is endemic also in certain parts of the Balkans and Turkey in Asia There are also typhus victims each year in Persia northern China and Siberia and cases have been known in Japan In England and Wales there were over 23,000 deaths from typhus between 1869 and 1883 2 249 from 1884 to 1898 and only 390 since then to the end of 1913 France from 1903 to 1913 had a total of 209 deaths from typhus, the seacoast provinces suffered most The Scandinavian countries seem to have escaped most In the recent epidemic in Serbia it is estimated that 135,000 persons died from typhus In Russia the deaths from typhus between 1905 and 1911 ranged each year from 3 639 to 10,500, but there were comparatively very few cases at Moscow and Petrograd In northern Africa the disease always has a foothold but rarely becomes epidemic Egypt has from one to two thousand deaths annually but during the first half of 1915 there were 14 505 cases reported with 3,398 deaths It was at Tunis that attention was first attracted to the louse as the possible conveyor of the disease confirmed by our own investigators in Mexico, our American endemic focus The records show a total of 56 719 cases and 14 758 deaths in Mexico from 1893 to the end of 1913

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[1] McCombs Am Jour Med Sc October 1912 p 577

[2] Meltzer S J Pharyngeal Insufflation A Simple Method of Artificial Respiration, The Journal A M A May 11 1912 p 1413

THE JOURNAL OF THE
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SATURDAY, OCTOBER 28, 1916

THE TREATMENT OF WAR WOUNDS

The fluctuations of surgical opinion concerning the treatment of war wounds have been noted in THE JOURNAL from time to time in the letters from foreign correspondents and in other departments At the beginning of the war a general opinion prevailed, and was acted on, that the special conditions of war wounds called for the energetic use of strong antiseptics according to the listerian technic It is notorious that the results were unsatisfactory Two other methods have since come into favor, one the Dakin-Carrel method, employing hypochlorites, and the other the Wright or so-called physiologic method

A series of articles appeared by Sir Almroth Wright[1] In these he explained his method and gave the experimental basis for it A vigorous reply from Sir Watson Cheyne,[2] formerly Lister's assistant and now president of the Royal College of Surgeons, followed in another publication Practically Sir Watson Cheyne seems to have constituted himself the uncompromising champion of the so-called listerian method According to Sir Watson Cheyne the unfavorable results which were given by this method in the early part of the war were due to defective technic He states that the improved technic devised by himself and other members of the commission *ad hoc* did give in some hands excellent results, and would have given them more generally but for the fact that justice was not done in the official trials, owing to the prejudice entertained by the surgeons He intimated that discipline alone prevents the thousands of surgeons who have been using the Wright method from expressing their dissatisfaction Later,[3] Wright gave an explanation of further development of his method, but this article was not a reply to Sir Watson Cheyne's attack on the method The reply came, however, none the less vigorous for the delay[4] Wright divides his answer into two parts The first is a contribution to the ethics of polemic controversy, the main thesis of which is that truth must be learned at all hazards, even at the risk of personal offense to parties in the controversy Having thus explained himself, Sir Almroth takes up the second part, in which he applies this principle and proceeds to berate Sir Watson generally He does not, of course, attack the president of the Royal College of Surgeons in his private capacity, but only in his scientific life, the methods of thought and action as illustrated in the article published in the *British Journal of Surgery*

All who have had to do with the treatment of wounds during the present war are emphatic in declaring that they differ in important respects from what is customary in the lesions encountered in civil practice Indeed, surgeons with experience of previous wars have found that wounds in this war have features peculiar to themselves Sir Watson Cheyne, however, speaks of war wounds as though they were fairly comparable with such compound fractures as occur in civil life This is not the view of the majority of the writers on the subject, and it seems to be the strength of Wright's[5] position that war wounds are invariably infected, that in only rare cases does the wounded man present himself for adequate treatment within a short time of the infliction of his wound, that highly infected foreign bodies are usually found in all complicated war wounds, that the latter are not open wounds accessible to swabbing with strong antiseptics (remember that Sir Watson Cheyne wants to recommend pure phenol [carbolic acid]), and can only rarely be converted into open wounds, that in such a wound it is not its cavity or limiting surface, but the interior of the adjacent tissue which is important as regards infection, and that no strong antiseptic has ever been shown to penetrate a useful distance into the walls of the wound, although, of course, such antiseptics may be absorbed by the vascular system and thereby give evidence of their presence in the systemic circulation

Wright's method consists essentially of irrigating the wound first with hypertonic salt solution and then, at the appropriate moment, with isotonic saline solution Vaccines may be used as adjuvants Finally the wound is closed The rationale of this method is that hypertonic saline solution checks microbial growth, and causes a mechanical cleansing of the wound and of the depths of its walls by the lymph exuded, while inhibiting the tryptic action of the exudate The isotonic saline solution permits and encourages phagocytosis and tryptic digestion of clots and other solid exudates

In the Dakin-Carrel technic, a modification of Labarraque's hypochlorite solution is kept flowing continuously or nearly continuously in contact with the wound, in the belief that thereby antisepsis or even disinfection can be combined with mechanical cleansing Toward this method both extremists extend a hand much in the familiar way of belligerents courting neutrals Sir Watson Cheyne welcomes the hypochlorites as antiseptics and germicides which he hopes will prolong the useful period for the employment of such agents Sir Almroth Wright, while not conceding their value as antiseptics in septic wounds and still less as disinfectants, sees in them constituents of an irrigating fluid far less objectionable than the ordinary antiseptics, if only because they are devoid of the antienzymic properties of the latter It is well here to draw attention to the fact that the antiseptic action of the hypochlorites in wounds has been strongly challenged by others than the thick-and-thin adherents of Sir Almroth Wright, and their disinfecting action is denied by a much larger number It must be borne in mind that the action of an antiseptic in a wound is difficult to measure in nonexperimental conditions The mere fact of obtaining a positive result by culture, showing the presence of living bacteria, is of no significance, and strictly comparable quantitative results are difficult to obtain by direct examination of smears

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[1] Wright A E Wound Infections and Their Treatment Lancet, London 1915, ii 957 1009, 1063

[2] Cheyne W W Treatment of Wounds in War, Brit Jour Surg January 1916

[3] Wright A E Treatment of Infected Wounds by Physiologic Methods Lancet London 1916 i 1203

[4] Wright A E The Question as to how Septic War Wounds Should Be Treated Lancet London Sept 16, 1916

[5] Wright A E (Footnotes 3 and 4)

THE INCUBATION PERIOD IN INFECTIOUS DISEASE

The "incubation period" is the expression applied to the interval of time, usually quite definite in length, between the moment of entrance of bacteria into the body and the first appearance of the symptoms of consequent disease The explanations ventured for this characteristic delay have not always been easily squared with the facts Obviously the small number of bacteria which gain an inroad into the tissues in spontaneous infection is entirely inadequate in itself to produce symptoms Part at least of the incubation time is therefore postulated to be consumed in the multiplication of the bacteria—their growth, distribution and accumulation in number sufficient to cause a noticeable physiologic disturbance Less clear is the function, commonly assigned to part of the incubation period, for the action of the toxin or poison produced by the invading micro-organism

Illuminating evidence has been shed on the nature of the defensive mechanism and immunity responses on the part of infected animals, by Bull[1] of the Rockefeller Institute for Medical Research, New York He devoted his attention to what takes place in the dog when it is infected with pneumococci The dog was chosen because of the alleged comparatively high resistance which this species exhibits to these micro-organisms, for here the mechanism of the immunity might disclose itself more readily than in individuals like rabbits, which promptly succumb with septicemia to an exceedingly small quantity of a virulent culture of pneumococci Bull found that injected cocci leave the circulating blood with rapidity The mass of bacteria introduced disappears within so short a period as ten minutes, but the pneumococci reinvade the blood a day or two later In dogs the septicemia reaches its climax between the fourth and fifth days and then abruptly declines, the blood becoming sterile within from one to three days after the height of the septicemia is reached This would probably be the end of the infection if it were not for the fact that a meningitis may develop in the meantime

The initial disappearance of the pneumococci from the circulation has been found to be due to the agglutination of the diplococci within the blood stream and to the accumulation of the clumps in the lungs, liver, spleen and other organs The significance of this reaction in resistance to infection was recently discussed in The Journal[2] By successive reinoculations at various stages in the processes already described, Bull has ascertained that the pneumococci are able to reinvade the circulation because they have acquired a fastness to the existing antibodies The latter have not become exhausted, but serum which once agglutinated and opsonized the original cultures later fails to be able to accomplish this protective result On the other hand, pneumococci isolated as the infection is subsiding are more susceptible to the action of immune serums than the original cultures injected Bull remarks that this seemingly paradoxical finding that the pneumococci become more resistant to the action of antibodies in the early part of the infection and later more susceptible is probably due to the nature and strength of the antibodies operative at the different phases of the infection In the incubation period, only the natural antibodies are present, while in the decline of the septicemia acquired antibodies have appeared

On the basis of the newer observations,[1] it is suggested that the incubation period of infectious diseases is due to the fact that the infecting agents must become adapted to the adverse conditions encountered in the newly infected host before they can multiply sufficiently to produce the symptoms of disease It is further suggested that epidemics may arise because the infectious agent is passed from person to person in the ascending stage of the disease and thus enters new hosts in a state of maximum resistance to the natural antibodies of such individuals When early contacts are avoided, epidemics tend to subside because the infectious agent is weakened by the action of acquired antibodies during convalescence

The part played by the newly acquired antibodies at the time of the crisis in the septicemia gives a possible clue to the scheme of the natural recovery from infectious diseases in man If the host can offer sufficient resistance to the invading bacteria, Bull says, to forestall a profound depression of the physiologic functions, or a fatal issue, until specific antibodies can be formed and mobilized, recovery will result On the other hand, if the host offers little or no resistance to the bacteria at the time of infection, and the incubation period is eliminated, the battle is lost before defensive antibodies can be formed The latter condition is found in the case of pneumococcus septicemia in rabbits, and the former in pneumococcus septicemia in dogs Comparative pathology, thus fruitful in its results, must be depended on to bring still further and fuller knowledge of infection and resistance in general

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[1] Bull C G Immunity Factors in the Pneumococcus Infection in the Dog Jour Exper Med 1916 xxiv 7

[2] Resistance to Infection editorial Oct 21 1916 p 1230

THE RAPIDITY WITH WHICH SUGARS BECOME AVAILABLE FOR METABOLISM

The fact that a considerable period of time usually elapses before the stomach becomes empty after an ordinary mixed meal tends to lead us to forget how rapidly certain foodstuffs may become available for metabolic use if only they reach a place suitable for absorption and are in a form appropriate for entrance into the circulation It ought not to be surprising, when one stops to consider the promptness with which drugs introduced by mouth may unfold their pharmacodynamic potency and thereby give indication of having been absorbed *from the alimentary canal* But in the case of foods there are few tangible evidences of absorption that do not require some special technic or laborious examination to bring them to light Once the food is eaten, the progress of its ingredients in the nutritive exchanges becomes veiled in mystery to the subject who ingests it

There is more than mere theoretical interest in knowing what food materials are most promptly available Nutritive emergencies, though not frequent, do arise at times The tendency at present would probably be to resort to intravenous rather than gastro-enteric modes of nutrition under such circumstances It may come as a surprise, therefore, to learn that some of the sugars may begin to be burned in the organism within from five to ten minutes after they are ingested Higgins,[1] of the Nutrition Laboratory of the Carnegie Institution, has employed the respiratory quotient, now easily determinable in the human individual, as a means of recognizing the immediate fate of the ingested substance Sucrose, lactose and levulose begin to be burned very promptly, that is, within ten minutes, when they are ingested into an empty stomach so that they are rapidly passed into the absorbing intestine

Glucose and maltose, on the other hand, are not utilized as food as soon as the other sugars just mentioned From twenty to thirty minutes may elapse before their combustion plays any important part in the metabolism This does not mean that glucose or maltose—which yields glucose prior to its absorption from the digestive tract—are inferior foodstuffs Higgins comments that the outcome of such observations makes it clear that there is a fundamental and distinct difference in the metabolism of the various sugars in man, and that from a nutritional point of view one must recognize the possible necessity of differentiating between them in their action and use One might say in brief, Higgins adds, that levulose and sometimes galactose, judging from the respiratory quotient, shows a tendency or a preference to change to fat in the body, while glucose tends to change to glycogen and be stored as such

That maltose behaves so similarly to glucose is to be expected from its being a disaccharid yielding two molecules of glucose Sucrose, the common sugar of the table, breaks down in digestive hydrolysis to give one molecule of levulose and one of glucose Probably it is its levulose fraction which affects the respiratory quotient so promptly Lactose, or milk sugar, furnishing galactose and glucose on hydrolysis, similarly seems to owe its rapid metabolism to the galactose rather than the glucose moiety of the molecule

It may further appear surprising that some of these sugars begin to be burned in the body quite as promptly as is alcohol administered under comparable conditions, despite the very rapid absorption of alcohol, beginning in the stomach itself Although alcohol thus is not available as a food any sooner than are some of the sugars, it will be burned in preference to sugar when the two are taken together[2] Alcohol begins to be burned in appreciable quantity in from five to eleven minutes after it is taken, the rapidity varying with different persons

CREATIN, CREATININ AND MUSCLE TISSUE

It is difficult to believe that two comparatively simple compounds so nearly alike in chemical structure and so readily converted, each into the other, as are creatin and creatinin do not have some intimate interrelationship in the organism where both occur Ordinarily each of these substances is restricted in its appearance to some definite tissue locality Creatin is primarily a constituent of muscle, whereas creatinin occurs in the blood and the urine, and is *currently* believed to represent an end-product of a particular type of endogenous tissue metabolism The appearance of creatin in the urine, in adult life, at once suggests the existence of an unusual if not a technically abnormal functional condition

The chemically trained mind, recognizing the structural resemblances between these two biologically important substances, is naturally inclined to the supposition that urinary creatinin is derived from muscle creatin The physiologic evidence in support of such a belief has not always been convincing, nor has the place of origin of the excreted creatinin been discovered with any degree of certainty One mode of attacking the problem has consisted in feeding or injecting creatin into the living organism and attempting to follow its fate Another direction of investigation has led to the study of what changes, if any, the creatin of muscle may undergo under conditions of tissue survival[1] Gottlieb and his collaborators believed several years ago that they had demonstrated the existence of specific enzymes in muscle which could convert these substances into each other Their work has been the subject of lively criticism, doubtless in part justified, nevertheless, the careful researches of Myers and Fine[2] on the metabolism of creatin and creatinin tend distinctly to the conclusion that muscular tissue is the site of creatinin formation

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[1] Higgins H L The Rapidity with Which Alcohol and Some Sugars May Serve as Nutriment Am Jour Physiol 1916 xli, 258

[2] Togel Brezina and Durig Biochem Ztschr 1913 L 296

Newer experiments by Hoagland and McBryde[3] of the Bureau of Animal Industry in Washington show very clearly the transformation of muscle creatin into creatinin during autolysis Judging by their results, this reaction must be ascribed to a very considerable degree, at least, to its facilitation by enzymes The special value of this new contribution lies in the fact that the investigators were successful in conducting the autolysis of muscle under the conditions of strict asepsis, obtainable only with difficulty, yet essential The objectionable possibility of the interference of bacteria, on the one hand, or the inhibitory effect of added antiseptics, on the other, was thus averted In the course of the postmortem aseptic autolysis of muscle tissue, which exhibits in a marked degree the property of converting creatin into creatinin, an equilibrium between these substances is finally established In life, however, with an intact circulation and continuous removal of the product of the reaction, the continued production of creatinin would not necessarily be impeded in the same way

Muscular tissue appears to have, in an appreciable degree, the ability both to produce and to destroy creatinin Obviously all of these findings must be regarded as having some bearing, indirect though it may be, on the formation of creatinin in the body At any rate, the government investigators, taking into account the now known facts on the subject, are convinced that there is much evidence in support of the theory that muscle creatin is the source of urinary creatinin, with a creatin-creatinin-free diet, and considerable evidence to the effect that in part, at least, the transformation of creatin into creatinin takes place in the muscular tissue

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[1] These questions have been discussed in editorials published in THE JOURNAL during the past two or three years

[2] Myers V C and Fine M S The Metabolism of Creatine and Creatinine tenth paper The Relationship Between Creatine and Creatinine in Autolyzing Tissue Jour Biol. Chem 1915 xxi, 583

[3] Hoagland R and McBryde C N Effect of Autolysis upon Muscle Creatin Jour Agric Research 1916 vi 535

Current Comment

INDUSTRIAL ACCIDENTS

The workmen's compensation law, passed by Congress to give to certain government employees the right to receive compensation for injury sustained in the course of their employment, became effective, Aug 1, 1908 Bloedorn[1] describes the method of recording injuries in the United States Navy Yard at Washington, D C, developed since that date, and analyzes the various factors which entered into the production of accidents for a period of two years beginning Jan 1, 1914 The average number of men employed during these two years was 3,202 The total number of men who reported one or more injuries was 2,178 The statistics were studied from every conceivable point of view, and a mere statement of the chief results of this analysis is instructive The highest percentage of injuries occurred among employees between the ages of 16 and 20, and decreased steadily to those between the ages of 50 and 59, from which point there was a constant rise with advancing age A higher injury rate was shown by colored than by white employees, although engaged in less hazardous work as a rule, and by single than by married employees The injury rate was markedly higher during the first six months of employment, and skilled employees showed the lowest percentage, whereas helpers and apprentices showed the highest percentage The day of the week had a very slight influence It is especially interesting to note that the greatest percentage of injuries occurred during the first two hours of work, with a steady decline for each two-hour period thereafter The author believes that the first two hours constitute the period of adjustment of the workman to his machinery, and that during this period the workman is more susceptible to injury Of 4,711 injuries received by 2,178 men, 1,263 were received by 188 men, in other words, a small number, 8 6 per cent, of the total number of men injured received over 26 per cent of the total number of injuries While these are the chief factors of interest in the analysis, many others are discussed, for example, the type of injury, the duration of illness, the percentage of accidents in various working shifts, and the percentage of fatal accidents As a result of his study, Bloedorn makes several recommendations In accordance with the foregoing analysis, he recommends that the new employee be given especial attention until he becomes accustomed to his machinery and to his fellow employees, that special effort be made to avoid accidents during the first two-hour period during the day, that particular attention be given to shops which show a high percentage of injuries, and that certain dangerous machinery be provided with guards wherever practicable The large number of injuries to eyes suggests, of course, the use of protective goggles, and Bloedorn recommends that these goggles be made compulsory for all employees engaged in work which

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[1] Bloedorn W A Studies of Industrial Accidents which Occurred in the Navy Yard at Washington D C U S Naval Medical Bulletin 1916 x 585

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest such as relate to society activities new hospitals education public health etc)

DELAWARE

Personal—Dr Joshua A Ellegood, Wilmington, has been elected president of the Delaware Society for Social Hygiene

New State Society Officers—The annual meeting of the Delaware State Medical Society was held at Milford, October 9 and 10, under the presidency of Dr George I McKelway, Dover The address in surgery was delivered by Dr Charles H Frazier, Philadelphia Middletown was selected as the place of meeting for 1917, and the following officers were elected president, Dr James Beebe, Lewes, vice president, Dr John Ball, Elsmere, secretary, Dr George W K Forrest, Wilmington (reelected), treasurer, Dr Samuel C Rumford, Wilmington, and delegate to the American Medical Association, Dr Willard Springer, Wilmington

ILLINOIS

Diphtheria in School—River Forest Grammar School was ordered closed for a week, October 17, on account of the discovery of six cases of diphtheria among its pupils

Personal—Dr Raymond L Hatfield, Danville, suffered a severe electrical shock from a Roentgen-ray machine at St Elizabeth's Hospital, Danville, October 16——Dr Alvin B Cary, Donnellson, was operated on for disease of the kidney in the Jewish Hospital, St Louis, October 14

Ogle County Tuberculosis—At a meeting held in Oregon, Ogle County, September 15, an organization was formed for the prevention of tuberculosis An exhibit was made at the Ogle County Fair The question of whether or not Ogle County shall have a sanatorium for the treatment of tuberculosis will be submitted to the voters at the election next month

Harvey Tercentennial—Dr Frederick G Novy, Ann Arbor, Mich, delivered the opening address of the Harvey Tercentennial, which was held in Galesburg, October 13, under the auspices of the Kent County Medical Society The subject was "Anaphylaxis and Anaphylatoxin" Addresses were also delivered by Drs George W Crile, Cleveland, and Bertram W Sippy, Chicago

Medical Unpreparedness—At the opening exercises of the College of Medicine of the University of Illinois, held in Chicago, October 5, Edmund Janes James, president of the university, delivered an address on the "Functions of the State in the Promotion of Medical Education and Research," in which he pictured the unpreparedness of the United States in matters of public health and called attention to the great ignorance regarding the cause and the means of prevention of the many and the most common diseases

Chicago

Personal—Dr Harry C Rolnick has reached Berlin on his way from the Graudenz Hospital to his new post of duty at the psychopathic hospital in Pardubitz, Bohemia

New Appropriation for Poliomyelitis—The city council, October 9, passed an ordinance appropriating to the health department $17,000 to continue its work against anterior poliomyelitis

Typhoid Fever at High School—Numerous cases of typhoid fever have recently been reported among students of the Englewood High School The source of infection is believed to be a typhoid carrier

Lectures at Children's Hospital—A series of lectures on the care of children is to be given at the Children's Memorial Hospital, on Wednesdays, at 11 a. m The lecturers include Drs Henry F Helmholz, Samuel J Walker, Frank S Churchill, Coleman G Buford, Edwin W Ryerson and Miss Elsie Burks, New York

Antituberculosis Meeting—The twenty-second meeting of the Robert Koch Society for the study of tuberculosis was held, October 26, at the Hotel Morrison Dr Harry J Corper spoke on "Some Interesting Laboratory Problems in Tuberculosis," and Dr Walter A Gekler discussed the "Clinical Applications of These Problems"

Boats Must Purify Water—Orders were issued, September 17, by the United States Public Health Service that the passenger steamers on the Great Lakes shall either install water purifying plants or take water on board at port of call Of the twenty-two passenger steamships entering the port of Chicago, eleven have already complied with the requests, previously made, by the installation of violet ray plants

Diphtheria Epidemic—Diphtheria is reported to be prevalent in South Chicago, where forty-seven cases have been reported——The examination of the pupils at the Frances Willard Public School by the health department physicians revealed more than forty diphtheria carriers Four children are under quarantine at their homes——During September, more than 150 cases of diphtheria were reported in the city

Studies Mental Defectives—Dr Henry I Adler, chief of staff of the Boston Psychopathic Hospital, is spending several months in Chicago at the request of the Civic Club and the Illinois Society for Mental Hygiene, under the auspices of the Rockefeller Foundation His especial work is to be a survey of the mental defectives of Chicago and Cook County, and he will work in the courts and other institutions where there are facilities for detecting and handling defectives

MARYLAND

English Physicians in Baltimore—Sir Henry Burdett and Dr A C Morton, London, England, were the guests of honor at a dinner given by Dr Winford H Smith, superintendent of Johns Hopkins Hospital, at the Maryland Club, September 30

State Appropriation for University—The University of Maryland has recently obtained the state appropriation of $15,000 for medical education for 1915 and a similar amount for 1916, which, owing to the financial embarassment of the state treasury, was not paid when due The whole amount of $30,000 has now been paid

Gift to Hopkins—Isaac F Nicholson, Baltimore, celebrated his eightieth birthday by giving the Johns Hopkins University $15 000 for the establishment of the Isaac Forester Nicholson Fund, to establish scholarships for needy students from Baltimore or the state of Maryland, or to be used for any other purpose the trustees may desire

Personal—Dr James A Nydegger, U S P H S, has resigned the chair of tropical medicine at the University of Maryland, as his public health service duties claim his entire time——Dr Arminius C Pole, after many years' service as professor of anatomy in the Baltimore Medical College and professor of descriptive anatomy in the University of Maryland since the merger of the two schools in 1913, has resigned——Dr William L Smith, Riderwood, who has been in ill health for the last six months, underwent a successful operation at the Union Protestant Infirmary, October 19

Modification of Infantile Paralysis Quarantine—A further modification of the infantile paralysis quarantine in Baltimore will permit children 9 years of age and over to return to school and to attend moving picture theaters The quarantine may be lifted entirely after next week, as the plague seems to be on the wane During the past week comparatively few cases were reported to the city health department——The outbreak in Garrett County is being investigated by the state board of health to determine whether or not the disease was imported from Pennsylvania There have been twenty-two cases in Garrett County since July 1

MASSACHUSETTS

Health Association Meeting—At the October meeting of the Massachusetts Association of the Boards of Health, held in Holyoke, October 19, the program included a discussion on the tuberculous cow, quarantine hysteria and anterior poliomyelitis

Personal—Dr Maynard Ladd has succeeded Dr Arthur A Howard as physician in chief of the children's department and of the hospital for children of the Boston Dispensary——Dr Bernard W Carey, Fitchburg, chairman of the state board of health, has resumed practice after a long illness from septicemia

Changes at Harvard—The following appointments were announced by the overseers of Harvard University Drs Edward Hall Nichols and Charles Allen Porter have been elected clinical professors of surgery in the Harvard Medical School, and the following assistants have been appointed

Donald Mitchell Glover and Joseph Haskill McGuire, histology, MacIver Woody, Harry Saul Bernstein and Francis Lowell Burnett, pathology, George Glymer, alumni assistant in neurology, and Leroy Upson, Gardner, instructor in pathology The following appointments have been made on the staff of the Collis P Huntington Memorial Hospital Dr Robert Battey Greenough, surgeon in charge, Dr Edward Hammond Risley, assistant surgeon, Dr George Adams Leland, Jr, surgeon of outpatients, and Dr Frank Weld Peabody, consulting physician The resignations of Albert Alphonso Wood Ghoreyeb, a fellow in pathology, Louis Harry Newburgh, alumni assistant in medicine, and James Earle Ash, instructor in pathology, were accepted

MINNESOTA

New State Officers—At the annual meeting of the Minnesota State Medical Association, held in Minneapolis, October 11 to 13, under the presidency of Dr J Warren Little, Minneapolis, the following officers were elected president, Dr Harper M Workman, Tracy, vice presidents, Dr John H Adair, Owatonna, Arthur C Rogers, Faribault, and Herman M Johnson, Dawson, secretary, Dr Thomas McDavid, St Paul (reelected), treasurer, Dr Earl L Hare, Minneapolis, councilors, Drs Joseph G Millspaugh, Little Falls, second district, Warren A Dennis, St Paul, third district, and Clarence E Persons, Marshall, fifth district, delegates to the American Medical Association, Drs Warren L Beebe, St Cloud, and Harry P Ritchie St Paul, and alternates, Drs George D Head, Minneapolis, and William H Magie, Duluth The next meeting of the association will be held in St Paul, October, 1917

Sanatorium Notes—The Wabasha County Tuberculosis Sanatorium, which is to be known as Buena Vista Sanatorium, near Lake City, was ready for opening, October 15 The buildings consist of an administrative building in the center with a 90-foot wing on each side, each wing having ten rooms, one for men and one for women, and each room having a separate porch The cost of the sanatorium, including site, construction and equipment, has been about $40,000, of which the state contributes one half——The plans for the new building at the Glen Lake Tuberculosis Sanatorium, to be erected at a cost of $30,000, with beds for thirty-four patients, were blocked, September 16, when the county commissioners in their request to the board of tax levy cut the appropriation of $57,000 to $35,000——The Clay Becker Sanatorium, Lake Park, was given its final inspection, September 11, and after acceptance by the commissioners will be ready for opening——According to the plans of the Lake Julia Sanatorium board, a free clinic is to be established in Bemidji under the charge of Dr Leo G Guyer, Lake Park

NEW MEXICO

Personal—Dr Benjamin H Frayser, Shiprock, first lieutenant, M R C, U S Army, has been ordered for active duty in the southern department——Dr Ignatz D Loewy has succeeded Dr Thomas J Cummins as medical director of St Joseph's Sanitarium Silver City——Dr Edward A Montenyohl, Deming, is spending several months as a member of the house staff of the Willard Parker Hospital, New York, in the service of the poliomyelitis wards

New State Officers—At the annual meeting of the New Mexico Medical Society, held in Albuquerque, October 11 to 13, Las Cruces was selected as the place of meeting for next year The following officers were elected president, Dr Clifford S Losey East Las Vegas, president-elect Dr John W Kingsinger, Roswell, vice presidents, Drs Charles A Frank, Albuquerque, Franklin H Crail, East Las Vegas, and Hugh V Fall Roswell, secretary, Dr Robert E McBride, Las Cruces, treasurer, Dr Frank E Tull, Albuquerque, and councilors, Drs Walter Kaser East Las Vegas, Harry A Miller, Clovis, and George S McLandress, Albuquerque

NEW YORK

State Clinics for Poliomyelitis Cripples—The first clinic for the after-care of cases of poliomyelitis was opened, October 17, at White Plains Dr Robert W Lovett, Boston will examine each patient and direct the treatment Later it is planned to hold clinics in other parts of the state Over thirty patients were examined the first day of the clinic Clinics were held at Mount Vernon and Port Chester, October 18 in North Tarrytown, October 20, and at Yonkers, October 21

Personal—Dr Earl G Danser, Buffalo, has been nominated for representative to the assembly from the seventh district ——Dr Arthur Eisbein has been appointed city diagnostician ——Dr Francis J Lennon has been appointed city physician, replacing Dr Herbert H Bauckus, who has been on a year's leave of absence——Drs John and Edward S Van Duyn, Syracuse, recently returned after several months in the French army hospital service

Quarantine at Cornell and Vassar—It is reported that all Cornell students who roomed at a house where a case of infantile paralysis developed have been quarantined for two weeks This is the first case of infantile paralysis that has appeared at Ithaca for many months Although there have been no cases of infantile paralysis at Vassar College, that institution has been placed under strict quarantine and students warned against visiting New York

New York City

Cartwright Lectures—The Cartwright lectures of the association of the alumni of the College of Physicians and Surgeons were delivered at that institution, October 24 and 25, by Dr Richard M Pearce of the University of Pennsylvania on "The Spleen in its Relation to Blood Destruction and Regeneration"

War Antitoxin—In a hearing on the budget, it is reported that Health Commissioner Emerson made the statement that the laboratories of the department of health have furnished $205,000 worth of antitoxin to Europe since the outbreak of the war, two thirds of which had gone to the allies The state provides that the city of New York may sell its surplus antitoxins produced by the department, but that the money accruing from such sales must be used in the production of more antitoxins or for the prevention and treatment of infectious diseases

Case Fatality of Poliomyelitis—Up to October 16, there have been 9,209 cases of poliomyelitis placed under quarantine in this city Of these, 250 were found after careful investigation not to be true cases of poliomyelitis The total number of deaths recorded is 2,362 or a case fatality of 26 24 The total number of cases admitted to hospitals was 5 294, and the total number treated 4,474 This difference in the admissions and number of cases treated was due to transfers from one hospital to another From August 31 to October 13, there have been discharged from the hospitals of the department of health 2,053 cases Of these 66 per cent showed evidences of paralysis to some extent, 15 per cent showed that paralysis had wholly disappeared, and 15 per cent had not shown paralysis at any time It has been estimated that 75 or 80 per cent of those crippled will fall into the class that will receive free treatment

Antirabic Work—The comparative statistics of the health department for 1915 and 1916 show the effect of active antirabic work in diminishing the number of cases of rabies The number of persons examined for dog bite during the first and second quarters of this year totaled 1,320, while during the corresponding period of 1915 the number was 1,655, a diminution of more than 20 per cent, which may be attributed to the muzzling regulation The number of dogs suspected of rabies and removed for examination diminished from 3,044 to 699, and the number of cases of rabies in dogs from forty-seven to fourteen, 70 per cent reduction There have been no deaths from rabies in the first six months of 1916 The antiglanders work shows an increase in the number of horses examined and tested with mallein from 562 for the first six months of 1915 to 1 866 for 1916 There was a reduction in the number of horses condemned as afflicted with glanders from 393 to 213

NORTH CAROLINA

Hospital Wards Opened—October 16, the maternity and baby wards of the Biltmore Hospital were formally opened with appropriate ceremony These wards were the gifts, respectively, of the widows of the late George W Vanderbilt and Alfred Gwynne Vanderbilt

Illegal Practitioner Prosecuted—The State Board of Medical Examiners, operating under the new statute, has instituted a number of suits against illegal practitioners through the office of the attorney general Information regarding illegal practitioners in the state sent to the secretary of the board Dr Hubert A Royster, Raleigh, will be received in confidence and placed in the proper hands for prosecution, and the case will be pressed to a prompt trial

Portrait Presented—At Raleigh, October 13, Chief Justice Walter Clark, on behalf of the state, received from Dr Louis

J Picot an oil painting of the late Dr George W Long Graham Dr Long was formerly a member of the State Board of Medical Examiners, president of the state medical society, and was widely known and respected This gift of his portrait to the state by his professional friends is timely and appropriate

Personal—Dr Lauren O Gibson, Statesville, has opened a private surgical hospital, and has associated with him in the management Dr Addison G Brenizer, Charlotte——Dr William H Smith, Goldsboro, has been elected county physician for Wayne County, succeeding Dr Richard W Spicer, resigned to accept service with the National Guard on the southern border——Lieut J W O'Connell, now on duty with the National Guard at El Paso, has resigned and resumed his duties as college physician and teacher of biology at Davidson College

PENNSYLVANIA

Personal—Dr Claud D Roop, Lancaster has entered on his duties as assistant physician at the State Hospital, Norristown

Dauphin Physicians Organized—Physicians in the upper end of Dauphin County have organized a branch of the county medical society with Dr Charles M Rickert, Millersburg, as president, Dr Harry A Shaffer, Williamstown, as vice president, and Dr Joseph W Shaffer, Elizabethville, as secretary

Railway Surgeons' Association—The ninth annual convention of the Railway Surgeons' Association of the Pennsylvania lines east of Pittsburgh was held at the Bellevue-Stratford October 19 to 21 The following officers were elected president, Dr W B Henderson, Phillipsburg, vice president, Dr Charles J Roberts, Berwyn, secretary, Dr Amos W Colcord, Clairton, and treasurer, Dr Joseph C Egbert, Wayne

Northumberland County and Clean Milk.—The Northumberland County Medical Society has undertaken a thorough campaign of education on the subject of clean milk Following a request for such action, made at the August meeting by Dr George G Gill, Sunbury, a committee consisting of Dr Clay H Weimer and Dr Henry T Simmonds, Shamokin and Dr Gill was named to carry on the work The campaign in Sunbury is well under way with Sunday evening addresses by physicians in the principal churches, daily newspaper articles, and illustrated evening lectures thrice weekly in a large, centrally located tabernacle Great interest in the movement is evident, and the obtaining of one or more producers of certified milk in the county is assured Compulsory registration of all milk and ice cream dealers and their sources of supply with a grading of 70 per cent required and certificates of health for every person employed in the milk industry, are among the regulations demanded by the committee

Philadelphia

Infantile Paralysis Report—Since July 1 and up until October 20, there have been 946 cases in Philadelphia with 282 deaths An organization known as Lovers of Children collected $1,347 to buy braces and other necessaries for convalescents

Funds to Send Doctors to Germany—A festival to complete a fund of $16 000 most of which has already been raised to send six Philadelphia doctors to Germany was held at the Philadelphia Turngemeinde October 23 The physicians are expected to sail within a few weeks Instead of taking up posts at various war fronts, they will be sent to cities where there is a shortage of medical men They will remain six months

Officers Nominated—At the regular quarterly business meeting of the Medical Club of Philadelphia, held at the Bellevue-Stratford October 20, the following officers were nominated president Dr Charles K Mills and Dr William D Robinson, first vice presidents, Drs D Oram Ring and William Martin, Atlantic City, N J , secretary Dr William S Wray, treasurer, Dr Louis Adler, Jr and governors, Drs Paul J Sartain and McCluney Radcliffe

New Hospital Formation—October 14, the new Masonic Memorial Hospital of Elizabethtown was turned over to the Grand Lodge of the State of Pennsylvania This hospital was contributed by the Philadelphia Masons and the cornerstone of the institution was laid, September 29 The building is a three-story granite structure, and is arranged to accommodate thirty-eight patients The cost of the building was $60,000 Two other buildings will be errected in the near future, at a total cost of $200 000

Personal.—Dr Theodore Le Boutillier has been appointed pediatrist to the Philadelphia General Hospital——Dr Adolph I Ringer has been appointed professor of clinical medicine in Fordham University, New York——Dr Burton Chance has been chosen by the board of city trusts as an attending surgeon at Wills Eye Hospital——Dr Hunter W Scarlett and Dr Peter McCall Kettine, who recently returned from serving in the American Ambulance in Paris, will relate their experiences at University Hospital on October 31, the annual donation day

Rebuild Blockley—Members of the medical board of Philadelphia General Hospital, consisting of the staff of the institution, met October 16, and unanimously approved of the rebuilding of the Philadelphia Hospital on the present site at Thirty-Fourth and Spruce streets instead of the establishment of district hospitals a plan approved by the chamber of commerce The sum of $1,000 000 is available for expenditure on the new building and plans have already been drawn for it One of the reasons against the district hospital idea was that it meant about $8 000,000 more debt for the city

VERMONT

State Society Meeting—At the annual meeting of the Vermont State Medical Society, held in St Johnsbury, October 12 and 13, under the presidency of Dr William W Townsend, Rutland, the following officers were elected president, Dr Charles H Beecher, Burlington, vice president, Dr Charles W Howland, Shoreham, secretary, Dr William G Ricker, St Johnsbury, treasurer, Dr Edward H Martin, Middlebury, councilors, Drs Schuyler W Hammond, Rutland, second district, and Dr Clinton J Rumrill, Randolph, fourth district, nominees, Drs Winfield S Nay, Underhill, and Dr Walter L Havens Chester Depot, and alternate and delegate to the American Medical Association, Dr Fred T Kidder, Woodstock. The house of delegates elected the following officers president, Dr Patrick E McSweeney Burlington, vice presidents, Drs Fred T Kidder, Woodstock, and William E. LaZell, Barre, and secretary, Dr Fred E Steele, Montpelier Clinics were conducted by Drs John R. Williams, Rochester, and Ellsworth Eliot, Jr Albany Barre was selected as the next place of meeting

GENERAL

Western Surgeons' Meeting—The Western Surgical Association will meet in St Paul, December 15 and 16, under the presidency of Dr Lawrence W Littig, Davenport, Iowa, instead of at Indianapolis as previously announced

Prevention of Blindness—The second annual meeting of the national committee for the prevention of blindness will be held November 24, in the Academy of Medicine, New York under the presidency of William Fellows Morgan The principal address will be delivered by Surg John McMullen, U S P H S, who will describe his campaign against trachoma

Railway Surgeons Elected—At the annual meeting of the American Association of Railway Surgeons, held in Chicago, October 16 to 19, the following officers were elected president, Dr William Battle Malone, Memphis, Tenn , vice president Drs Edwin S McDonald Cameron Mo , Mark L Bishoff Fort Madison, Iowa and William C McGrath Eagle Grove, Iowa, secretary, Dr Louis J Michell Chicago (reelected) , treasurer, Dr Henry B Jennings, Council Bluffs Iowa (reelected) and executive board Drs Samuel C Plummer, Chicago, and David Y Roberts, Louisville (reelected)

Prevention of Infant Mortality—The seventh annual meeting of the American Association for the Study and Prevention of Infant Mortality was held in Milwaukee October 19 to 21 under the presidency of Dr Samuel M Hamill, Philadelphia The following officers were elected president, Dr William C Woodward Washington, D C , president-elect Dr Philip Van Ingen, New York, vice presidents, Mrs William Lowell Putnam, Boston and Dr Borden S Veeder, St Louis, secretary Mr Albert Cross, Philadelphia, treasurer, Mr Austin McLanahan Baltimore (reelected) and executive secretary, Miss Gertrude Knepp, Baltimore (reelected)

Courts' Decisions on Public Health—Reprint No 342 of the *U S Public Health Reports* contains the judicial opinions which were published in the *Public Health Reports* between May 30, 1913, and Dec 31 1915 It is divided into two parts digest of judicial opinions, arranged in topical outline under suitable headings and the reports of the cases or excerpts therefrom The digest covers public health in so far as this subject has been considered by the courts Opinions relating to house plumbing, noises and offensive odors have not been included This reprint will be of value to those interested in public health Its usefulness could be greatly increased, however, by a better index of cases cited It contains an alphabetical index of the cases published in the second part, but gives the titles only without reference to the official reports, in the digest of the cases, again only the titles are given without official citations This is most inconvenient if the volume is to be readily used for what is apparently intended, a handy reference to the judicial decisions on public health

FOREIGN

Festskrift for Professor Muller of Stockholm—A bulky, finely illustrated volume of 833 pages has been dedicated to Erik Muller, professor of anatomy at the University of Stockholm, by his friends and pupils on the occasion of his fiftieth birthday It forms No 3 of volume xlii of the archives of the Swedish Medical Association Each of the thirty-six articles is accompanied by a summary in German or in French, except one which is to be published in a German medical journal The *Festskrift* is to be reviewed in the Current Medical Literature Department

CANADA

Tuberculosis Hospital for Soldiers—A $50 000 building for soldiers invalided home with tuberculosis will be erected by the London (Ont) Health Association This will be established in connection with the Byron Sanatorium in that city It is being established at the request of the Military Hospitals Commission, and it is expected that the Dominion and provincial governments will each bear one half the cost

Osler and the Canadian Army Medical Services—Soon after the war began Sir William Osler was appointed honorary consulting physician at the Queen's Canadian Hospital, Shorncliffe Since that time he had also been an honorary adviser in connection with the Canadian hospitals generally in England To express his sympathy with Surgeon-General Jones, Sir William Osler has cabled his resignation to Premier Borden of Canada, and, it is understood, may go to Canada to speak in defense of General Jones

Colonel Bruce's Report on C A M C in England—The report, referred to in The Journal, October 21, p 1239, continues to be the topic of discussion in medical circles in Canada, as well as to invite further discussion in the public press A fuller text of the report is now to hand It is substantially as follows A complete reorganization of the medical services is recommended, also that the arrangements in Canada, England Overseas Dominions be coordinated The report advocates the treatment of Canadian casualties in Canadian hospitals, that Canadian hospitals be concentrated, and all voluntary hospitals be abolished The care of the Canadian sick and wounded should be the first duty of the Canadian Army Medical Corps Incapacitated Canadian soldiers should be returned to Canada as soon as they are fit to travel to receive further medical treatment at the established hospitals in Canada It is recommended that the Red Cross hospitals be taken over and the three Canadian hospitals at Saloniki brought back to England if the imperial authorities can spare them from that eastern base It is further recommended that 1,000-bed hospitals be established at Halifax, Montreal Toronto, Winnipeg and Vancouver and a smaller one at Ottawa In these there should be accommodation for a limited number of officers Canadian medical officers who have had experience at the front should be brought home to organize these hospitals and medical boards in different sections of Canada should weed out the unfit before they go overseas No more medical units should be organized in Canada for overseas duty There should be a director of medical services and a deputy director on the line of communication in France and another deputy with the C A M C in France Assistant directors should be with (Canadian) embarkation, nursing service, records, invaliding and supplies According to the report of Colonel Bruce's committee, the Canadian wounded soldiers want to be taken to Canadian hospitals, and for that purpose the concentration of these hospitals is recommended It is stated that, up to the present, Canadian doctors who have gone overseas to treat Canadian soldiers have rarely had that opportunity The use of voluntary aid hospitals is objected to because of inefficiency and cost The system of sending casualty cases to hospitals is not good, and when there patients have been kept too long In many cases it is claimed they could have been returned to Canada or to the firing line In the handling of certain special diseases the service in England has been unsatisfactory, and when experienced doctors have gone over to England from Canada, in many cases, their services have not been properly engaged

LONDON LETTER

London, Oct 9, 1916

The War

THE WORK OF THE ARMY SURGEONS

The work of the army surgeons in this unprecedented war, which has absorbed almost half the physicians of the country, is as full of danger and thrilling episodes as that of the soldiers The toll taken from them by death is considerable During the past three months, fifty-three have been killed, four are missing and 208 have been wounded In the same period 260 of their ambulance men have been killed and 1,212 wounded For the battle of the Somme the most careful preparations were made by the medical corps The commander-in-chief, Sir Douglas Haig, himself superintended the arrangement of the regimental aid posts and casualty clearing stations The terrific bombardment of the present battles has modified the method of dealing with the wounded In the early days of the war the regimental aid posts used to be placed in some deserted farm house near the front trench Today as we advance, no structure of any kind is left standing The only shelter for the surgeon is one of our own trenches or a captured German trench For safety the advanced dressing stations are placed underground protected by 4 or 5 feet of earth above them There in cavernous chambers the work is done by artificial light, and electric torches are necessary to pass through the various windings connecting the underground rooms From this place the wounded are evacuated as rapidly as possible to the corps collecting station, where each man arrives with his wound dressed and a label on which is written the diagnosis Here there is a field operating theater, but operations are performed only in cases of urgency The next stopping point is the clearing station, which is often a large building such as a school or mill transformed into a hospital

Smallpox Without Eruption

Dr Willoughby, health officer in the port of London, records an outbreak of smallpox among a family of ten persons who, after a visit to the Holy Land, boarded a homeward-bound vessel at Port Said, and states that it derived special interest from clear evidence of smallpox without eruption in two of the cases The ship's quartermaster, who had taken the disease from one of the children, had as severe an attack of confluent smallpox as had ever been recovered from Of the twelve sufferers—the family of ten, and two of the crew—two young unvaccinated children died

Women in the Medical Schools

As stated in previous letters to The Journal the shortage of physicians due to the war has caused an influx of women students into the profession Previously they were admitted to very few of the ordinary medical schools and had to take their course in one of the few schools formed for training them alone Now the war has caused several relaxations of regulations To most of the London hospitals women students are not admitted At St George's Hospital, however, during the war a strictly limited number of women students are eligible for admission In the event of the war coming to an end before such women students are qualified, they will be allowed to continue their studies until qualification This school was the pioneer among the metropolitan medical schools in opening its doors during the war to women medical students The council of Charing Cross Hospital recently decided to throw the school and hospital open to women medical students It has done this because it feels that the medical education of women should be on lines as broad and comprehensive as those enjoyed by men The dean of the hospital says "All the learned professions—and medicine not less than another—demand of those who profess them very high ideals and standards of conduct and these requirements are more likely to be obtained if the students, whether male or female, are educated under identical conditions Any possible tendency to overestimation of the attainments of the individual is undesirable"

The hospital and school are now open to women on equal terms with men St Mary's Hospital, at the request of the Royal Free Hospital, School of Medicine for Women (the only medical school in London entirely devoted to the training of women students) agreed to take a certain number of women students annually for their clinical course on the same terms and under the same conditions as men These students were to be drawn exclusively from those who had entered as students at the London School of Medicine for Women and had completed their preliminary and intermediate studies The scheme has now been in working for four months, and no friction of any kind has arisen A separate common-room has been provided for the women students, who enjoy exactly the same privileges as the men King s College, which for some years had women students in its classes for the preliminary medical subjects, lately admitted them to the anatomy department, in the first instance limiting the number to twenty The final studies of these women students can be taken at Charing Cross, St George's, and St Mary's Hospital Medical Schools, in addition to the Royal Free Hospital for Women It will thus be seen that only one of the great medical schools of London admits women as a matter of principle At the Royal Free Hospital a great extension of the Medical School for Women has been opened by the queen The cost was $150 000 It is now possible to give a complete course to 450 students

The Court of the University of Edinburgh has made a new departure It has resolved to admit women in the winter session to all the medical classes, systematic and practical, in the university The systematic lectures in midwifery and gynecology will be given separately to men and women students, and possibly also those in materia medica, but in all other subjects the classes will be mixed There will be separate sections for women in all practical courses except in advanced courses, and in special cases that may be arranged by the head of the department Women will be admitted to university clinical instruction as soon as arrangements can be made They are now under consideration and it is expected that by next year women students will be able to take their whole curriculum within the university

PARIS LETTER

Paris Sept 28, 1916

The War

THE PREVENTION OF DEAFNESS DUE TO EXPLOSIONS

Heretofore attention to disorders of the auditory apparatus caused by nearby explosions of projectiles has mainly been directed to treatment In a communication to the Academie de medecine, Dr Wicart of Paris has taken up the question of prophylaxis According to him, the brutal effect of artillery fire or the bursting of shells may be considerably attenuated if the soldier takes precaution before, during and after the explosion of swallowing his saliva two or three times while pinching the nostrils Also, during bombardments and artillery fire he should place in his external auditory meatus a bit of cotton soaked in glycerin and place on his head or ear guards padded with cotton If these simple and quite efficacious precautions have not been taken owing to the unexpectedness of the explosion, it is still necessary to bear in mind that however violent the traumatism of the auditory apparatus may be, it will have no serious consequences if infection can be avoided Often such an infection has its origin in a previous one of which the patient was unaware nasal or pharyngeal catarrh, hypertrophy of the turbinates, obstruction of the eustachian tube old cicatricial otitis indurated wax and cephalic congestion in syphilitics, in malarial patients, in those who are subject to some poisonings (such as lead), and in arthritis For these reasons the absolute cleanliness of the auricular passages is necessary as an insurance against those permanent infirmities of hearing which too often follow these injuries Therefore the external meatus should be cleaned and dressed with glycerin as stated, and camphorated oil with 1 per cent of eucalyptol or of essence of lavender should be instilled into the nostrils In the absence of these mentholated petrolatum may be used but is much less efficacious These instillations should be made with the patient lying on his back, the head a little drawn back, in which position the patient should remain for five minutes In every case men deafened and injured by these explosions ought to receive this first aid in the sanitary formations in order to avoid an infection which might transform a simple shock into suppurative otitis

MANUFACTURE OF CLINICAL THERMOMETERS FOR THE ARMY

Mr Justin Godart, undersecretary of state of the health service, has installed at the central pharmacy of the army a workshop for the manufacture of clinical thermometers The object of this is to form an instructional and educational center for war cripples who will learn the trade at this factory and then will be distributed over the country in order to create an industry of clinical thermometers, an industry which Germany had almost succeeded in monopolizing

MEDICAL STUDENTS AND THE WAR

Mr Justin Godart, undersecretary of state of the health service, has decided to enroll all students of medicine as nurses, even those who have taken only two semesters

EXTRACTION OF PROJECTILES FROM THE LUNGS

Dr Marquis has made a communication on this subject to the Reunion medico-chirurgicale de la V-e armee in which he insisted on the possibility of extracting projectiles lodged in the lungs without danger and without causing pain or functional trouble For this purpose, two methods are available, that of Marion, by fixation of the lung to the pleura, and that of Duval, exteriorization of the lung The presence or absence of pleuropulmonary adhesions revealed by roentgenoscopy decides the choice Should they be present, the fixation method is preferable, not only because it respects the adhesions which if broken might bleed, but, especially, because these same adhesions are often the result of the localized infection around the projectile and this method avoids a greater extension of the infection of the pleural cavity In the absence of adhesions, however, it is better to utilize the method of exteriorization of the lung which is more respectful of the pulmonary tissue, does not cause permanent adhesions between the lung and the pleura, and gives healing by first intention and, therefore, much more rapidly But in order to obtain from this method the best results of which it is capable, drainage must be avoided Aspiration of the intrapleural air is not indispensable, the pneumothorax being rapidly absorbed spontaneously Seven patients with wounds with intrapulmonary projectiles have been operated on by Marquis In two cases, the projectile was not removed, one because it was not detected in a completely retracted lung, and the other, which was a flat piece of metal, because it was firmly adherent to the pericardium, it was thought better to leave it in place rather than to involve this membrane In five other cases, the removal of the projectile occasioned no difficulty, although in some it was situated at a great depth In no case was there any serious complication There was a slight rise of temperature on the day following the operation, especially with the method of fixation With the same method also, hemoptysis occurred on the evening and the day after the operation Finally, in one case a pleural hemorrhage had to be drained Marquis concludes that with the reserve that the removal of a projectile adherent to a vital organ should not be obstinately persisted in the extraction of intrapulmonary projectile under conditions of rigorous asepsis serves the double purpose of curing a certain number of wounded and maintaining their efficiency to an appreciable extent

Poliomyelitis

The Conseil superieur d'hygiene has had its attention called to the question of poliomyelitis by Mr Brisac, director of the Hygiene publique at the ministry of the interior In view of the anxiety to which the epidemic in the United States might give rise in public opinion Mr Brisac requested the opinion of the council as to whether it was necessary for the French authorities to take measures to prevent a possible extension of the epidemic to France Should the answer be in the affirmative, he asked what measures should be taken at the maritime frontiers and finally, if any cases should occur, what prophylactic measures should be applied Dr Netter read a report which concluded that poliomyelitis, long known in France (French scientists, Cornil and Charcot especially were the first to point out the characteristic lesions of the spinal cord) has caused in France only isolated cases There is no reason to fear that this disease can acquire in this country an epidemic character In these circumstances the council is of the opinion that no special measures of precaution need be taken Nevertheless, the Academie de medecine a few weeks ago passed a resolution that poliomyelitis should be placed on the list of notifiable diseases The council has in its turn approved this proposition In consequence of this double request the minister of the interior to whom the resolution of the council of hygiene has been communicated by Mr Brisac will in all probability cause a decree to be issued in the sense desired by the council

Marriages

John Weston Emmons, M D, Poplar Grove, Ill, to Mrs Emma Downy of Aurora, Ill, at Rockford, Ill, September 28

Sophy Ellen Page, M D, East Bethany, N Y, to Rev Charles Leonard Carlucci of Springfield, Mass, October 5

DeLorme Fordyce, M D, Conshohocken, Pa, to Miss Anna R Beishiag of Philadelphia, in New York, September 30

William Solomon Jones, M D, Jeffersonville, Ga, to Miss Edith Louise Jackman of Menominee, Mich, October 13

Zadoc Lawrence Griesemer, M D, Roselle, N J, and New York, to Miss Sara L Crane of New York, October 5

Edwin Robert Wiese, M D, Washington, D C, to Miss Elizabeth Louise Elterich of Pittsburgh, October 11

Royal Cornelius Van Etten, M D, New York, to Miss Louise Greenfield of Rome, N Y, September 20

John Sims Hawkins, M D, Cedar Hills, Tenn, to Miss Marion True of Springfield, Tenn, October 4

Mathias Ambrose Wagner, M D, Lima, Ohio, to Miss Stella M Cable of Sandusky, Ohio, October 9

John B Floyd M D, Waverly Hill, Ky, to Miss Barbara L Lanahan of Louisville, Ky, October 9

John Alexander McDonald M D, to Miss Julia Loring Haines, both of Indianapolis, October 24

Edwin W Wuttke, M D, Sumner, Iowa, to Mrs Margaret Young of Des Moines, Iowa, October 12

Arthur Frederick Schuettler, M D, to Miss Matilda Genseka, both of Chicago, October 18

Robert Anderson Cooke, M D to Mrs Florence Rogers Turner, both of New York October 9

W Forrest Lee, M D, Ithaca, N Y, to Miss Ruth Jane McClelland of Brooklyn, October 14

Karl F E Wegener, M D Exeter, Neb, to Miss Ella Koenig of Lincoln Neb, October 4

John Moffett Lee, M D, to Miss Estelle Pearson Jones of Rushville, Ind, September 27

Joseph Charles Scal, M D, to Miss Lillian D Kaplan, both of New York, October 5

Roy S Sumner, M D, to Miss Niram Willett, both of Owensboro, Ky, October 4

Jacob T Bowman, M D, to Mrs Bertha Balme, both of Somerset, Pa, October 3

Deaths

Louis McLane Tiffany, M D, Baltimore, University of Maryland, Baltimore, 1868, aged 72, a member and once president of the Medical and Chirurgical Faculty of Maryland and a member of the Medical Society of Virginia, demonstrator of anatomy in his alma mater from 1869 to 1874, professor of operative surgery from 1874 to 1880 and professor of surgery from 1880 to 1902, and since that date emeritus professor of surgery, formerly consulting surgeon to Johns Hopkins and St Joseph's hospitals, the Church Home and other Baltimore institutions, for fifteen years surgeon in chief of the Baltimore and Ohio System, formerly president of the American Surgical Association and Southern Surgical and Gynecological Society, a surgeon of international note, died at his country home, Mount Custis, Accomac County, Va, October 23, from heart disease

David Braden Kyle, M D, Philadelphia, Jefferson Medical College 1891, aged 53, a Fellow of the American Medical Association and president of the American Laryngological Association in 1910, a member of the American Otological Society, American Laryngological, Rhinological and Otological Society and American Climatological Society, professor of laryngology and rhinology in Jefferson Medical College since 1896, chief laryngologist, rhinologist and otologist to St Mary s Hospital, Philadelphia, from 1891 to 1893 and since that time holding a similar position at St Agnes' Hospital, bacteriologist to the Philadelphia Orthopedic Hospital, author of a standard work on diseases of the nose and throat which has gone through five editions, died at his home in Philadelphia, October 23, from pneumonia

James Stewart Kennedy, M D, First Lieutenant, M R C, U S Army, Jefferson Medical College, 1880, aged 59, a Fellow of the American Medical Association, and a member of the Association of Military Surgeons of the United States, formerly captain and assistant surgeon, U S V, and acting assistant surgeon, U S Army, with service in Cuba and the Philippine Islands, once coroner of Franklin County, Pa, president of the Chambersburg City Council and county physician, president of the board of health of Selcedo, Samar, P I, during a cholera epidemic, died in the Walter Reed General Hospital, Washington, D C, October 7

William S Allee, M D, Olean, Mo, Missouri Medical College, St Louis, 1875, aged 64, a Fellow of the American Medical Association, president of the Missouri State Medical Association in 1907, and at the time of his death treasurer of the organization, president of the Miller County Medical Society, for twenty-four years president of the Miller County Exchange Bank, and for four terms a member of the state senate from the twenty-seventh district, died in Wesley Hospital, Kansas City, Mo, October 9, after an operation for intestinal obstruction

Oleon Clinton Owens, M D, Covington, Ky, Jefferson Medical College, 1887, aged 53, formerly a member of the Kentucky State Medical Association, for several years surgeon of the Chesapeake and Ohio Railroad at Maysville, Ky, a well known alienist, superintendent of the State Home for the Feebleminded, Frankfort, Ky, from 1905 and afterward superintendent of the State Hospital, Lakeland, died at his home, October 8, from the effects of a fracture of the hip sustained two days before in an accident at the Latonia race course

Walter Milroy Beck, M D, Clarkfield, Minn, Medical College of Ohio, Cincinnati, 1886, Jefferson Medical College, 1890, aged 54, a Fellow of the American Medical Association, a member of the hospital corps of the Minnesota regiment which served in the Philippine Islands during the war with Spain who was injured in an automobile accident, August 20, between Clarkfield and Granite Falls, sustaining a multiple fracture of the skull, died in St Barnabas' Hospital, Minneapolis, October 10

Francis Marion Michael, M D, Eaton, Ohio, Bellevue Hospital Medical College, 1879, aged 67, a Fellow of the American Medical Association, formerly president of the Preble County (Ohio) Medical Society, physician to the Children s Home, Eaton, president of the Preble County board and for several terms a member of the city council, local surgeon of the D and W T Railroad, died at his home, October 8, from cerebral hemorrhage

Winfield W McKay, M D, San Diego, Calif, College of Physicians and Surgeons, Keokuk, Iowa, 1873, aged 69, formerly a Fellow of the American Medical Association, a member of the Medical Society of the State of California, acting assistant surgeon, U S P H S, and in charge of the San Diego Quarantine Station at La Playa for twenty-five years past, died at the quarantine station, September 30, from nephritis

John Shaffer Sprowl, M D, Warren, Ind, University of Michigan, Ann Arbor, 1872, aged 66, a Fellow of the American Medical Association and vice president of the Huntington County Medical Society, president of the Warren Telephone Company, died at his home, October 10, from cerebral hemorrhage At a meeting of the county medical society, October 10, resolutions of regret were unanimously adopted

Mark D Weed, M D, Captain, Medical Corps, U S Army, Jefferson Medical College, Philadelphia, 1905, aged 35, a Fellow of the American Medical Association and a member of the Association of Military Surgeons of the United States, was graduated from the Army Medical School in May, 1910 and was promoted to captain in June 1914, died at his station, Fort Bayard, N M, September 28, from tuberculosis

Milton Bennett Titus, M D, Chicago, New York University, New York, 1881, aged 58, formerly a member of the Illinois State Medical Society and once president of the Allegany County (N Y) Medical Society, died in St Luke's Hospital, Chicago, October 14, from the effects of poison, believed to have been self-administered, with suicidal intent

Edward G Hersh, M D, McComb, Ohio, Cincinnati College of Medicine and Surgery, 1890, aged 50, formerly a Fellow of the American Medical Association, a member of the Ohio State Medical Association and National Association of Railway Surgeons, president of the Hancock County Medical Society, died at his home, October 3

Clarence A Rogers, M D, Cordova, Tenn, Memphis (Tenn) Hospital Medical College, 1903, University of the South, Sewanee, Tenn, 1906, Vanderbilt University, Nashville, Tenn, 1907, aged 38, died at his home, October 10, from the effects of a gunshot wound of the head, self-inflicted, it is believed, with suicidal intent

William Boys, M D, Portland, Ore, University of Pennsylvania, Philadelphia 1864, aged 71, formerly a Fellow of the American Medical Association, professor of diseases of women in the medical department of Willamette University, Portland, and gynecologist to the Portland Hospital, died at his home, October 2

Hayden Austin West, M D, Sewanee Tenn, University of Tennessee, Nashville, 1899, aged 44, formerly a member of the Tennessee State Medical Association, for several years professor of clinical operative, abdominal and minor surgery in the University of the South, Sewanee, died in an infirmary in Nashville, October 8

Thomas J Morton, M D, Philadelphia, Jefferson Medical College, 1885, aged 54, for twenty years a member of the Philadelphia City Council and afterward a select councilman, for many years coroner's physician, died at his home, October 12 from pulmonary hemorrhage following an attack of bronchitis

Charles R Hart, M D, Bethel, Conn, College of Physicians and Surgeons of the City of New York 1859, aged 79, a member of the Connecticut State Medical Society, surgeon of the Tenth Connecticut Volunteer Infantry throughout the Civil War, died at his home, August 29, from heart disease

Emmet Alvin Welsh, M D, Shreveport, La, University of Maryland, Baltimore 1887, aged 52, a Fellow of the American Medical Association pathologist and assistant superintendent of the State Charity Hospital, Shreveport, died October 6, after an operation for acute appendicitis

Lawrence Yancey King, M D, Florence, S C, Louisville (Ky) Medical College 1891, aged 45, a member of the South Carolina Medical Association, while on his way to Richmond, Va to undergo a surgical operation, died in the station at Richmond October 1

Wayne E J Bomberger, M D, Harrisburg Pa, Hahnemann Medical College Philadelphia, 1904, aged 35, died in the Keystone Hospital Harrisburg, October 6, from typhoid fever, complicated by an acute attack of appendicitis which necessitated an operation

Frank Knight Hill, M D, Rockford, Ill, New York Homeopathic Medical College New York 1875, aged 65, formerly a member of the Illinois State Medical Society, surgeon to St Anthony Hospital Rockford, died at his home October 8, from heart disease

Robert A Fitzgerald, M D, Alton Ill, formerly of Cairo, Ill, St Louis College of Physicians and Surgeons 1904, aged 42, a member of the Illinois State Medical Society, died in the Missouri Baptist Sanitarium, St Louis, October 10, from pneumonia

James R Thornbury, M D, Princeton, Kan, College of Physicians and Surgeons Keokuk, Iowa 1878 aged 73, a veteran of the Civil War and for forty-four years a practitioner of Franklin County, died at his home, about October 2

Chester H Latham, M D, Pecatonica Ill, Northwestern University Medical School Chicago 1876 aged 64, a member of the Illinois State Medical Society died at the home of his daughter, in Seward, Neb, October 11, from anemia

David Paulson, M D, Hinsdale Ill, Bellevue Hospital Medical College, 1894, aged 48, a Fellow of the American Medical Association, founder and superintendent of the Hinsdale Sanitarium, died in Asheville, N C, October 16

George Bayliss Stillman, M D, East Cleveland, Ohio, College of Physicians and Surgeons, Baltimore, 1880, aged 64, formerly a member of the Ohio State Medical Association, died in Buffalo, October 12

George Gray Wilson, M D, Cleveland, L R C P L R C S, Edinburgh L R F P & S Glasgow 1898, aged 44, died at his home, October 4 from pneumonia

Lafayette Jones, M D, St Johns, Mich, University of Michigan, Ann Arbor, 1872, was found dead from heart disease, in his home, September 30

***Azariah Paris Cobb*, M D**, Del Rio Texas, Mississippi Medical College, Meridian, Miss, 1912, aged 27, died at his home, October 3

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

SOME MISBRANDED NOSTRUMS

RADWAY'S READY RELIEF

Radway's Ready Relief, put on the market by Radway & Co, New York, and admittedly containing 27 per cent alcohol, was sold under such claims as

> This remedy will relieve rheumatism sore throat pleurisy, pneumonia headache burns and scalds spinal affections fevers dysentery cholera paralysis
>
> 'Cholera The Relief is almost a specific in this terrible epidemic *if used in time, will save nearly every case*"
>
> It acts as a preventive against the formation of concretions, gravel, or calculi '
>
> '*Radway's Ready Relief is a cure for Rheumatic* and Malarious Complaints'

The preparation was analyzed in the Bureau of Chemistry which reported that it was essentially a watery alcoholic solution of oleoresin of capsicum (cayenne pepper), camphor and ammonia The government officials charged that the product was misbranded in that the statements made regarding the curative effects were 'false and fraudulent" and were applied "in disregard of their truth or falsity' The company pleaded guilty and was fined $50—[*Notice of Judgment No 3704*]

A typical R R R advertisement of the older style

INGHAM'S VEGETABLE EXPECTORANT NERVINE PAIN EXTRACTOR

H A Ingham & Co of Vergennes, Vt, shipped a quantity of this nostrum in interstate commerce The Bureau of Chemistry analyzed a specimen of this nostrum and reported that it contained "alcohol 86 per cent opium alkaloids, camphor, capsicum and vegetable extractive matter" Some of the claims made for this morphin mixture were

> For teething and restless children it is not only safe and harmless but positively beneficial If sick it will do good if well it will do no harm '
>
> It is perfectly harmless "

It is charged that these statements were "false and fraudulent" and were made 'knowingly and in reckless and wanton disregard of their truth or falsity" The concern pleaded guilty and was fined $100—[*Notice of Judgment No 3754*]

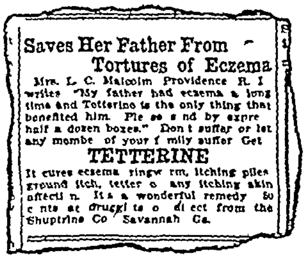
TETTERINE

This ointment, put out by the Shuptrine Company of Savannah Ga, was sold under such claims as

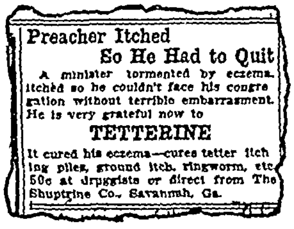
> 'Tetterine a marvelous remedy for Tetter Eczema and all contagious itching Eruptions

'The greatest of Skin Remedies in Household Use"
It is impossible to enumerate the great number of skin disorders for which Tetterine is a most pleasant panacea"

Twelve dozen packages of this product were seized by the federal authorities who alleged that the claims made for Tetterine were misleading, false and fraudulent, and that the curative claims made constituted misbranding The Shuptrine Company would neither admit nor deny the allegation of misbranding but consented to a decree of condemnation and prayed that it be allowed the privilege of reclaiming the product by giving bond After the company had paid the costs and furnished a bond in the sum of $250, the United States marshal turned the 12 dozen packages over to it—[*Notice of Judgment No 3736*]



Saves Her Father From Tortures of Eczema
Mrs. L. C. Malcolm Providence R. I writes "My father had eczema a long time and Tetterine is the only thing that benefited him. Please send by express half a dozen boxes." Don't suffer or let any member of your family suffer Get
TETTERINE
It cures eczema ringworm, itching piles ground itch, tetter or any itching skin affection. It's a wonderful remedy 50 cents at druggists or direct from the Shuptrine Co Savannah Ga.



Preacher Itched So He Had to Quit
A minister tormented by eczema itched so he couldn't face his congregation without terrible embarrassment. He is very grateful now to
TETTERINE
It cured his eczema—cures tetter itching piles, ground itch, ringworm, etc 50c at druggists or direct from The Shuptrine Co., Savannah, Ga.

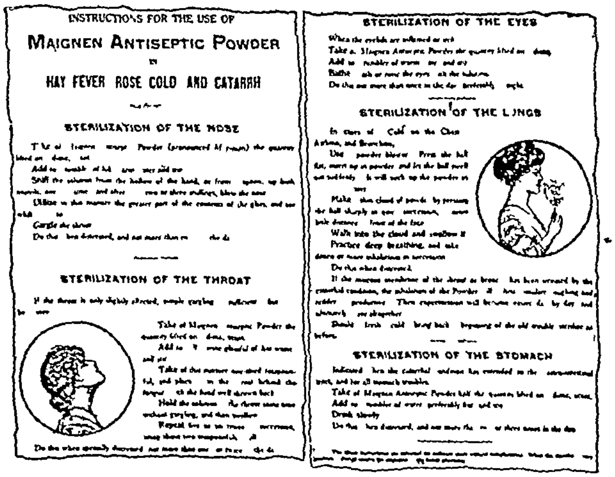
MAIGNEN ANTISEPTIC POWDER

Maignen Antiseptic Powder, put on the market by the Maignen Chemical Company, Philadelphia, was at one time exploited to the medical profession and was exposed in The Journal[1] It has since been analyzed by the federal chemists who reported that the product had essentially the following composition

Calcium carbonate	51 per cent
Borax aluminum sulphate and sodium carbonate	49 per cent

The trade package contained such statements regarding curative effects of Maignen Antiseptic Powder as

A perfect Germicide
'A scientific germicide for external and internal use."



INSTRUCTIONS FOR THE USE OF
MAIGNEN ANTISEPTIC POWDER
IN
HAY FEVER ROSE COLD AND CATARRH

STERILIZATION OF THE NOSE

[illegible]

STERILIZATION OF THE THROAT

[illegible]

STERILIZATION OF THE EYES

[illegible]

STERILIZATION OF THE LUNGS

[illegible]

Practice deep breathing, [illegible]

STERILIZATION OF THE STOMACH

[illegible]

Drink slowly

[illegible]

The exploiters of Maignen Antiseptic Powder tried to persuade the public that the preparation would sterilize the stomach throat nose lungs etc

There also were a number of directions describing how by the use of this preparation the skin stomach throat nose, lungs, etc, might be 'sterilized" The federal officials held that these claims were false and fraudulent,' and declared further that the product "could not effect sterilization" No claimant appeared and the court ordered that the United States marshal should destroy the product—[*Notice of Judgment No 3753*]

GREEN MOUNTAIN OIL OR MAGIC PAIN DESTROYER

The Charles N Crittenton Company, New York shipped in interstate commerce a quantity of "Green Mountain Oil or Magic Pain Destroyer" According to the claims made on the trade package, this stuff was said to be

'A Remedy for Diphtheria, Croup, Deafness and Sore Eyes, Rheumatic Pains, Stiff Joints, Pains in the Back, Side or Breast, Dyspepsia, Asthma Piles Burns Sore Throat, Sprains Wounds and Bruises Neuralgia Croup Toothache and Headache Earache and Stiff Neck, Felons Salt Rheum Broken Breast, Erysipelas, Chilblains and Frosted Feet This Oil will relieve all Nervous Complaints '

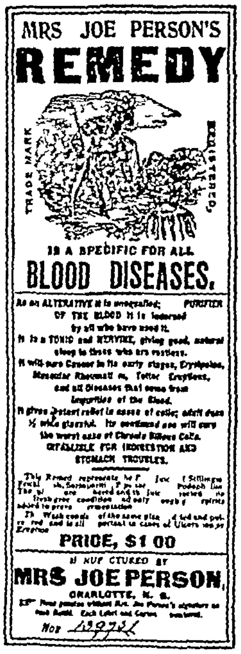
The federal chemists who analyzed the preparation reported that it consisted essentially of 95 per cent linseed oil, with oil of sassafras, oil of thuja and oil of turpentine with possibly small amounts of camphor The Crittenton Company, which was charged with making "false and fraudulent" claims for the preparation "in reckless and wanton disregard of their truth or falsity," pleaded guilty and was fined $100—[*Notice of Judgment No 3797*]

MRS JOE PERSON'S REMEDY

This preparation was sold by the Mrs Joe Person Remedy Company of Kittrell, N C, under such claims as

It will absolutely cure blood poison
Indigestion and nervousness permanently cured '
A Sure Cure for Eczema"
Malaria Chills and Fever a complete cure
'Pellagra Cured"

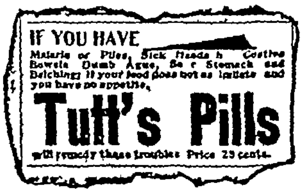
The federal chemists analyzed Mrs Joe Person's Remedy and reported that it was a slightly sweetened water-alcohol solution of vegetable drugs with a minute trace of alkaloids and the presence of podophyllin and sarsaparilla indicated The libel filed by the federal officials was for the seizure and condemnation of seventeen cases of this nostrum on the ground that the curative claims made "were misleading, false and fraudulent" The company in filing its answer neither admitted nor denied the truth of the material allegations After payment of costs and executing a bond in the sum of $200, the product was turned over to the company—[*Notice of Judgment No 3745*]


TRADE MARK
REGISTERED

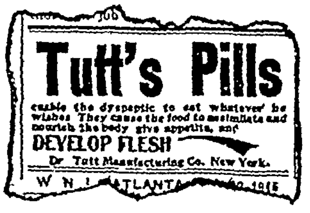
MRS JOE PERSON'S
REMEDY
IS A SPECIFIC FOR ALL
BLOOD DISEASES.
As an ALTERATIVE it is unequalled; PURIFIER OF THE BLOOD it is indorsed by all who have used it.
It is a TONIC and NERVINE, giving good, natural sleep to those who are restless.
It will cure Cancer in its early stages, Erysipelas, Muscular Rheumatism, Tetter Eruptions, and all Diseases that come from Impurities of the Blood.
It gives instant relief in cases of colic; adult dose ½ wine glassful. Its continued use will cure the worst case of Chronic Bilious Colic.
INFALLIBLE FOR INDIGESTION AND STOMACH TROUBLES.
[illegible]
PRICE, $1 00
MANUFACTURED BY
MRS JOE PERSON,
CHARLOTTE, N. C.
None genuine without Mrs. Joe Person's signature on each Bottle. Each Label and Carton numbered.
No [illegible]

TUTT'S PILLS

The Dr Tutt Mfg Company of New York was a trade name used by Brent Good, Harry H Good and Susan H Hoyt Tutt's Pills, put out by this concern, were analyzed by the federal chemists who reported that they consisted mainly of sugar, aloes, starch and calomel The nostrum was sold under claims to the effect that it was "a remedy for intermittent and remittent fevers, dropsy, dysentery, diseases of the kidneys and bladder, and all disorders that arise from a diseased liver or impure blood, and effective for relieving painful menstruation, and effective for preventing morning sickness peculiar to females' These claims the federal authorities charged, were "false and fraudulent" and applied 'knowingly and in disregard to their truth or falsity" Brent Good, Harry H Good and Susan H Hoyt pleaded guilty and each was fined $10—[*Notice of Judgment No 3788*]



IF YOU HAVE
Malaria or Piles, Sick Headache Costive Bowels Dumb Ague, Sour Stomach and Belching; if your food does not assimilate and you have no appetite,
Tutt's Pills
will remedy these troubles Price 25 cents.



Tutt's Pills
enable the dyspeptic to eat whatever he wishes They cause the food to assimilate and nourish the body give appetite, and
DEVELOP FLESH
Dr Tutt Manufacturing Co. New York.
W N [illegible] ATLANTA [illegible] 1915

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1 The Journal A M A Feb 15 1913 p 537 Nov 14 1914 p 1779

Correspondence

Colon Bacillus and Gastric Ulcer

To the Editor —I beg to call your attention to that part of your editorial of July 29 on "Gastric Ulcer and Gastric Acidity" which reads to the effect that it has been asserted that gastric ulcer can be produced quite uniformly in certain species by the intravenous injection of *Bacillus coli*, but Hardt has failed to substantiate this work Now, if you will refer to Hardt's report of his work, carried on under the supervision of Rosenow, you will observe that gastric and duodenal lesions were produced by him in 100 per cent of the animals injected with a certain strain of *B coli* Although his organism may not have been of the most favorable virulence for producing the most extensive possible lesions, still Strain 4 regularly produced gastric and duodenal erosions and ulcerations To quote Hardt, "Four rabbits were *injected with Strain 4 of B coli*, and the results of the injection were as follows

"A Rabbit I died in less than four hours after injection The stomach was perforated at the fundus There were ulcers and hemorrhages near the pyloric end" Compare this with the first case of my series reported in the Boston *Medical and Surgical Journal*, 1913 clxix, 81, and you will see that the animal died two and one-half hours after injection and showed a large perforation of the stomach, apparently a lysis of the stomach wall

B Rabbit II of Hardt's series died in less than twenty-four hours after the injection 'There was an ulcerated area near the fundus, and the intestines showed signs of hemorrhage" Compare this with my second rabbit in the article of the *Lancet-Clinic*, 1914 iii, 88, in which the protocol reads as follows "Full grown hare injected with 3 c c of clumped colon bacilli The animal was chloroformed twenty-four hours later The stomach was normal except at the pylorus where there were two hemorrhagic erosions The intestinal canal was negative except at the rectum, which contained considerable dark blood that probably originated in the erosions"

C Rabbit III and IV of Hardt's series had hemorrhages in the stomach and hemorrhagic areas in the duodenum Both were killed forty-eight hours after injection In comparison, read—Rabbit I in the *Lancet-Clinic* article and Protocols III and V of the *Boston Medical and Surgical Journal* article A necropsy of Rabbit I was held twenty-two hours after receiving the injection The stomach showed two erosions at the pyloric ring The lining of the stomach was thickly covered with digested blood The rabbit of Protocol V showed hemorrhagic elevations of the duodenum and a suspicious area of dissolution in the mucosa of the wall of the stomach near the pylorus

In the light of the foregoing comparative results THE JOURNAL editorial is misleading Hardt's statements that (1) gastric lesions were produced in every one of the rabbits injected with *B coli* of Strain 4 and that (2) there is in all probability a difference in virulence and specificity of the toxin produced by *B coli* are conclusions which should have been incorporated in the editorial

It may further be stated that Hardt did not repeat all my experiments, which is probably the chief reason (assuming that the colon strain was of proper virulence) for his failure to substantiate all

EDGAR C STEINHARTER, M D, Cincinnati

The "Biologic" Detail Man

To the Editor —Twelve or fourteen years ago, when I first began the practice of medicine, it was customary for 'detail men' to visit physicians at more or less frequent intervals, distributing samples of various proprietary nostrums and kindly giving advice as to the treatment of certain diseases and the practice of medicine generally The good work of THE JOURNAL and the Council on Pharmacy and Chemistry has largely eliminated these fellows, and we are practically free from the detail nuisance as we used to know him, but he is with us just the same He comes nowadays representing some "biologic" concern, but he comes, nevertheless, and he is just as free as ever with his advice and his "buncombe" He kindly tells us poor doctors, who haven't the means of learning otherwise, just how to use this or that serum or vaccine and just why our results are unsatisfactory and, altogether, sets us right in handling our difficult cases

To me these men are just as disgusting as the old time nostrum pedlers, and I am finding it more and more difficult to accord them that courtesy which I always try to show visitors to my office

GEORGE W WIMBERLY, M D, Ellensburg, Wash

Crown Gall and Cancer

To the Editor —At last I have succeeded in producing small tumors in plants without the use of the crown gall organism (*Bacterium tumefaciens*), that is, simply by means of substances which are by-products of the bacterial growth The tumors, though small, have been obtained repeatedly on several kinds of plants, and there seems to be no reasonable doubt that they are due to the fleeting chemical stimulus which I have applied Judging from my experiments, which have been continued for some months, the mechanism of tumor growth appears to be wholly one of changed osmotic pressures brought about by the metabolism of the tumor parasite A full report will be published later

ERWIN F SMITH, Washington, D C
Pathologist, Laboratory of Plant Pathology, Bureau of Plant Industry, U S Department of Agriculture

COMMENT —Previous references to Dr Smith's work are

Resemblances of Plant and Tree Cancer to Human Cancer, Miscellany, THE JOURNAL, March 23 1912 p 872
Is Cancer of Infectious Nature? editorial THE JOURNAL Aug 10, 1912 p 448
Smith E F Crown Gall and Cancer THE JOURNAL March 11, 1916 p 833
Is Cancer of Infectious Nature? editorial THE JOURNAL, July 8, 1916, p 123

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed Every letter must contain the writer's name and address, but these will be omitted on request

LIME WATER IN INFANT FEEDING

To the Editor —Has Dr Holt discontinued the use of lime water in his formulas for modified cow's milk for feeding infants?

E G MCKEOWN Edgerton Minn

ANSWER —Dr McKeown's letter was referred to Dr Holt, who replies

As a result of our investigations on the mineral constituents of woman's and cow's milk we have reached the conclusion that the great excess of calcium salts shown in cow's milk — even when it is diluted in the usual milk modifications — indicates that any further addition of lime to cow's milk is unnecessary As lime water is ordinarily employed I do not believe that the digestibility of cow's milk is affected to any important degree, and have therefore for some years omitted the addition of lime water to milk mixtures as a routine practice Occasionally, however, under special conditions I still use it, but in much larger proportions than ordinarily employed These points are now pretty well understood and generally accepted, in infant feeding

BACILLUS WELCHII — BACILLUS OEDEMATIS MALIGNI — BACILLUS CHAUVAEI

To the Editor —Jordan's Text Book of General Bacteriology," 1914 makes the statement that clinically it is not possible to distinguish between emphysematous gangrene (caused by the *Bacillus welchii*) and malignant edema (caused by the *Bacillus chauvaei*) Culturally from the discussion in the book one can pick out a few differences Is there any attempt by any bacteriologist to assert that the two diseases and the bacilli causing them are identical?

A B M

ANSWER —The statement to which our correspondent refers is also repeated in the fifth edition of Jordan's 'Text-Book of General Bacteriology and is based on the discussion of anaerobic infections in the classic work by Ghon and Sachs

(*Centralblatt fur Bakteriologie*, 1904, Orig, xxxvi, 200) The statement there made has reference to infections with *Bacillus oedematis-maligni* and not *Bacillus chauvoei* The latter is the cause of symptomatic anthrax in cattle, a disease which, so far as is known, is not communicable to man Although the distinctions between the various pathogenic anaerobes are often very subtle, there seems to be general agreement that *Bacillus oedematis-maligni* is quite distinct from *Bacillus welchii* Consequently no bacteriologist would be likely to assert that the infections were identical, no matter how close the resemblance might be in the clinical picture alone As is well known, there are many instances in which closely similar, if not identical, clinical symptoms are produced by different pathogenic microbes

LITERATURE ON OPERATIVE TREATMENT OF EPILEPSY

To the Editor —Please publish a list of articles in the literature covering operations done past and present for epilepsy (exclusive of the jacksonian type) appendicostomy and various abdominal procedures

W H Gardner M D Pittsburgh

Answer —In The Journal, Dec 25, 1915, p 2257, appeared a list of articles on 'Intestinal Causes of Epilepsy' The following references also concern operative treatment of this disease

Powers H and Lahey F H First Case in Which Abdominal Surgery Was Suggested for Relief of Epilepsy *Boston Med and Surg Jour* July 1916 abstr, The Journal Aug 12, 1916 p 542
Holmes, B Injury of Head with Oncoming Epilepsy Negative Abderhalden Reactions Operation, Drainage Cyst *Lancet Clinic* March 6 1915
Bloss, J R Indications for and Prognosis of Surgical Procedures in Epilepsy *West Virginia Med Jour*, September 1913
Matthiae K Traumatic Epilepsy and Its Operative Treatment *Deutsch Ztschr f Chir* August 1913 abstr The Journal Oct 11 1913 p 1414
Rauch I Operative Treatment of Epilepsy *Beitr z klin Chir* July 1913
Rasumowsky W J Operative Treatment of Cortical Epilepsy Traumatic and Non Traumatic, *Arch f klin Chir* July 26 1913
Kukula O Surgical Treatment of Epilepsy *Med Press and Circular* July 1913
Munson, F F End Results of Head Surgery in Epilepsy *New York State Jour Med* November 1912 abstr The Journal Dec 14 1912, p 2187
Shap E A Indications for Surgical Intervention in Epilepsy *New York State Jour Med* November 1912 abstr The Journal Dec 14 1912 p 2187
Tilmann O Operative Treatment of Epilepsy *München med Wchnschr* Dec 3 1912
Collier G K Practical Results of Surgery in Epilepsy *New York State Jour Med* November 1912
Curtis R M Case of Trephining in Epilepsy, *Australasian Med Gaz* July 6 1912
Ryan W A Surgery in Epilepsy *Southern Med Jour* May 1912 abstr The Journal May 25 1912 p 1640
Doberer Operative Treatment of Epilepsy *Wien klin Wchnschr* Feb 29 1912 abstr The Journal April 13 1912 p 1160
Taylor W J The Surgical Treatment of Epilepsy The Journal March 30 1912 p 967

INTRAVENOUS ADMINISTRATION OF SODIUM SALICYLATE — VENARSEN — BANNERMAN S SOLUTION

To the Editor —I am particularly interested in data concerning the intravenous administration of salicylate of soda guaiacol and glycerin in arthritis

What contraindications are there to the administration of it? What has been found to be the dose for the average weight patient say 170 pounds and what untoward results have been obtained from the administration of it?

I should like also the same data with reference to Venarsen and Bannerman s Solution Are any two of these incompatible or would the administration of two or more of them in one dose be contra indicated or cause untoward results?

If you care to answer through The Journal, I may be known as a

Medico

Answer —Sodium salicylate is absorbed rapidly and acts promptly when given by mouth Intravenous administration, therefore seems uncalled for, particularly since it does not avoid the gastric side effects of the salicylates which are due to stimulation of the vomiting center (Eggleston and Hatcher *Jour Pharmacol and Exper Therap* 1915 vii, 225) The intravenous method is said to be painful and renal irritation has been observed following the injection of 5 gm of the salicylate There appears to be no reason for administering guaiacol intravenously, either alone or in combination with sodium salicylate

From reports of the Council on Pharmacy and Chemistry on Venarsen (The Journal, May 22 1915 p 1780 Propaganda for Reform Ed 9, p 212) and Bannerman s Intravenous Solution (The Journal, Jan 2, 1915 p 70, Propaganda for Reform Ed 9 p 105) it will be seen that both are irrational preparations Their employment, singly or together is unwarranted

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arkansas Regular Little Rock, Nov 14 Sec Dr T J Stout, Brinkley Homeopathic Little Rock Nov 13 Sec. Dr Scott C Runnels 900 Scott St Little Rock Eclectic Little Rock Nov 14 Sec, Dr C E Laws 712 Garrison Ave, Fort Smith

Connecticut Regular, New Haven Nov 14 15 Sec, Charles A Tuttle, 196 York St New Haven Homeopathic, New Haven Nov 14 15 Sec Dr E C M Hall, 82 Grand Ave, New Haven Eclectic New Haven Nov 14 Sec Dr T S Hodge 19 Main St Torrington

Florida Regular Palatka, Dec 5 6 Sec Dr E W Warren Palatka Homeopathic, Jacksonville Nov 10 Sec Dr J B Griffin, St Augustine

Louisiana New Orleans Nov 30 Dec 2 Sec Dr E L Leckert, 716 Macheca Bldg New Orleans

Maine Portland, Nov 14 15 Sec Dr Frank W Searle 776 Congress St Portland

Massachusetts Boston Nov 14 16 Sec Dr Walter P Bowers Room 501 No 1 Beacon St Boston

Mississippi Jackson Oct 24 25 Sec Dr J D Gilleylen Jackson

Missouri Jefferson City, Nov 14 16 Sec Dr J A B Adcock, Jefferson City

Nevada Carson City Nov 6 Sec Dr S L Lee Carson City

Ohio Columbus, Dec 5 7 Sec Dr Geo H Matson State House Columbus

Rhode Island Providence Nov 15 16 Sec Dr Gardner S Swarts 70 Waterman St Providence

South Carolina Columbia Nov 14 Sec Dr A Earle Boozer 1806 Hampton St Columbia

Texas Fort Worth Nov 14 16 Sec Dr J S McCelvey, Temple State Bank Bldg Temple

West Virginia Parkersburg Nov 14 Sec Dr S L Jepson State Health Commissioner Charleston

Utah January Report

Dr G F Harding secretary of the Utah State Board of Medical Examiners reports the written examination held at Salt Lake City, Jan 6-7, 1916 The total number of subjects examined in was 19, total number of questions asked, 100, percentage required to pass 75 The total number of candidates examined was 2 both of whom passed Two candidates were licensed through reciprocity The following colleges were represented

College	PASSED	Year Grad	Per Cent
Rush Medical College		(1915)	83 9
University of Oklahoma		(1915)	82

College	LICENSED THROUGH RECIPROCITY	Year Grad	Reciprocity with
Tulane University of Louisiana		(1909)	Louisiana
Missouri Medical College		(1882)	Missouri

Utah April Report

Dr G F Harding secretary of the Utah State Board of Medical Examiners reports the written examination held at Salt Lake City, April 5 6, 1916 The total number of subjects examined in was 19, total number of questions asked 100 percentage required to pass 75 The total number of candidates examined was 3 all of whom passed The following colleges were represented

College	PASSED	Year Grad	Per Cent
Chicago College of Medicine and Surgery		(1915)	78 5
Johns Hopkins University		(1912)	*
University of Oklahoma		(1915)	*

* No grade given

Arkansas Eclectic May Report

Dr C E Laws secretary of the Arkansas Eclectic Medical Board reports the written examination held at Little Rock May 9-10 and Fort Smith May 15-16 1916 The total number of subjects examined in was 12, total number of questions asked 120 percentage required to pass, 75 The total number of candidates examined was 21 of whom 17 passed and 4 failed Two candidates were licensed through reciprocity The following colleges were represented

College	PASSED	Year Grad	Per Cent
Georgia College of Eclectic Med and Surg		(1916)	75 3 75 8 90 7 93 8, 96 7
Kansas City College of Medicine and Surgery		(1916)	78 1 79 79 1 80 2 81 1 81 6 81 6 82 1 83 6 84 1 85 1 88 4
	FAILED		
California Eclectic Medical College		(1909)	70 2
Georgia College of Eclectic Med and Surg		(1916)	63 1 67 7 74 2

LICENSED THROUGH RECIPROCITY

College	Year Grad	Reciprocity with
California Eclectic Medical College	(1903)	Nevada
Georgia College of Eclectic Medicine and Surgery	(1912)	Georgia

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Michigan June Report

Dr B D Harison, secretary of the Michigan State Board of Registration in Medicine, reports the written examination held at Ann Arbor, June 19-21, 1916 The total number of subjects examined in was 14, total number of questions asked, 100, percentage required to pass, 75 The total number of candidates examined was 74, of whom 72 passed and 2 failed One candidate was granted a reregistration license The following colleges were represented

College		Year Grad	Per Cent
	PASSED		
Yale University		(1916)	89 5
Northwestern University		(1916)	88 4 89 9
University of Illinois		(1916)	91
Tulane University of Louisiana		(1905)	83 6
Detroit College of Med and Surg		(1916)	83
University of Michigan Medical School		(1916)	82 5, 82 7 82 7, 82 8 83 2, 83 4 83 6, 83 6, 84 2, 84 3 84 3, 84 8 84 8, 85 1 85 2, 85 4, 85 4, 85 4, 85 5 85 7, 85 9 85 9, 86 1, 86 4 86 5 86 6 86 9 87 2 87 3, 87 3 87 6 87 6 87 6 87 7 87 8, 87 9 88, 88 88 1, 88 2, 88 3 88 6, 88 7 88 8 88 9 88 9 89, 89 4, 89 6 89 8 90, 90 90 2 91 5
University of Michigan Homeo Med School		(1916)	81 6 83 3, 86, 86 1 86 7 87 1 88 7
University of Buffalo		(1915)	82 4
University of Cincinnati		(1916)	85 4
Jefferson Medical College		(1916)	88 5
Vanderbilt University		(1915)	89 9
University of Jassy Roumania		(1904)	81 5
	FAILED		
Central Medical Coll of St Joseph		(1902)	38 4
Vanderbilt University		(1915)	82 9*

* Fell below the required average in one subject

Missouri June Report

Dr J A B Adcock, secretary of the Missouri State Board of Health, reports the oral and written examination held at St Louis, June 12-14, 1916 The total number of subjects examined in was 14, total number of questions asked, 100, percentage required to pass, 75 The total number of candidates examined was 126 of whom 117 passed and 9 failed The following colleges were represented

College		Year Grad	Total No Licensed
	PASSED		
Bennett Medical College		(1915)	2
Chicago College of Medicine and Surgery		(1916)	3
Coll of Phys and Surgs, Chicago		(1905)	1
Loyola University		(1916)	1
Northwestern University		(1915)	1
University of Illinois		(1915)	1
University of Louisville		(1909)	1
Johns Hopkins University		(1915)	2
Harvard University		(1915)	1
Missouri Medical College		(1888)	1
National Univ of Arts and Sciences		(1916)	50
St Louis University		(1916)	34
Washington University		(1916)	13
Ohio State Univ Coll of Med		(1916)	1
Meharry Medical College		(1916)	2
University of Tennessee		(1916)	1
University of West Tennessee		(1915)	1
University of Texas		(1916)	1
	FAILED		
St Louis Coll of Phys and Surgs		(1910)	1
National Univ of Arts and Sciences		(1916)	4
Meharry Medical College		(1915)	2
Univ of West Tennessee		(1914) (1915)	2

LICENSED THROUGH RECIPROCITY

Twenty eight candidates were licensed through reciprocity from Jan 1 to July 1, 1916 The following colleges were represented

College	Year Grad	Reciprocity with
University of Colorado	(1907)	Colorado
Atlanta Coll of Phys and Surgs	(1909)	Georgia
Bennett Medical College	(1914)	Illinois
Chicago Coll of Med and Surg	(1911) (1912) (1913 2)	Illinois
Hahnemann Med Coll and Hosp Chicago (1896) Kansas	(1900)	Michigan
Northwestern University	(1902)	Kansas
Rush Medical College (1901) Iowa	(1912) (1915)	Illinois
College of Phys and Surgs Chicago	(1912)	Illinois
Drake University	(1913)	Iowa
Sioux City Coll of Medicine	(1900)	Nebraska
University of Kansas	(1906) (1907)	Kansas
Kentucky University	(1903)	Indiana
Louisville Medical College	(1878)	W Virginia
University of Louisville	(1911)	Indiana
University of Michigan Medical School	(1907)	Michigan
Barnes Medical College (1906) Illinois (1910) Oklahoma	(1911)	Tennessee
Kansas City Hahnemann Med Coll	(1914)	Kansas
John A Creighton Medical College	(1913)	Kansas
University of Pennsylvania	(1907)	Penna

Book Notices

Cerebellar Abscess Its Etiology, Pathology, Diagnosis and Treatment, Including Anatomy and Physiology of the Cerebellum By Isidore Friesner, M D Adjunct Professor of Otology and Alfred Braun M D F A C S, Assistant Aural Surgeon, Manhattan Eye Ear and Throat Hospital Cloth Price, $2 50 net Pp 186, with 26 illustrations New York Paul B Hoeber, 1916

The progress made recently in knowledge of the cerebellum especially in its relation to the vestibular system, makes a book on the subject of cerebellar abscess, presented in the light of the latest researches, timely The authors both otologists, limited themselves in the clinical part of their work to a consideration of cerebellar abscess The book, however, is much more comprehensive It includes chapters on the anatomy and physiology of the cerebellum, a chapter on the symptomatology of cerebellar abscess, and a discussion of the diagnostic methods employed to distinguish cerebellar from labyrinthine diseases which apply equally well to other lesions of the cerebellum

Original photographs and illustrations help to make the reading matter easily intelligible While the volume is small, details are not omitted The chapter on the anatomy of the cerebellum describes all the known fiber tracts which pass to and from the cerebellum, as well as those which are connected with Deiter's complex The chapter on the pathology of cerebellar abscess discusses with creditable thoroughness the modus operandi in the spread of infection from the middle ear to the cerebellum, and the same is true of the chapters on the symptomatology and treatment of cerebellar abscess The chapter on the physiology of the cerebellum, while perhaps too brief and not commensurate with the magnitude and importance of the subject, answers the purpose

The book makes available for the first time in the English language, a detailed description of the theory and technic of the past-pointing test as worked out by Barany

Generally speaking, the book may be said to be in accord with our present state of knowledge Attention should be called however, to a few possible exceptions The authors describe forced movements, vertigo and nystagmus as phenomena resulting from lesions of the cerebellum itself, the latter two symptoms as resulting from the interruption of the vestibulocerebellar tracts This seems to vary from present general opinion Vertigo is cerebral in origin and entirely independent of the cerebellum It may be produced (galvanic vertigo) after complete extirpation of the cerebellum, as shown experimentally by Purkinje and Hitzig Forced movements, in the light of recent research, are likewise independent of the cerebellum They are produced by the interruption of the centrifugal or centripetal vestibulomesencephalic tracts in the posterior longitudinal bundle and their prolongation into the central nuclei of the cerebrum In speaking of forced movements, the authors mention falling to the side, curvature of the trunk and extension of the limbs, phenomena which are but seldom designated that way, and take no cognizance of the most impressive form of such movements namely, the rolling movements and circus movements The latter phenomena cannot be explained by the assumption that "the tonic impulses on the normal side predominate and thus produce the forced movements" (pp 53 and 58) Section of the posterior roots resulting in hypotonicity on the side of the lesion may be followed by stumbling and falling of the animal—and this without reference to the side of the lesion—but never by rolling movements The forced movements, the rolling movements and circus movements as well as their minor forms, such as conjugate deviation of the head and eyes, and skew deviation (the Hertwig-Mejendic squint) are now looked on as dynamic, and not as paralytic, phenomena They are the expression of disturbances in spatial orientation, in which consciousness of the direction toward which the movements take place becomes predominant and seem to be allied to vertigo, essentially a sense of rotatory movement Like vertigo, they have their origin above the brain stem, and are totally independent of the cerebellum of its afferent and efferent tracts

The chapter on the anatomy of the cerebellum might have perhaps with advantage omitted a description of the fiber tracts, direct or indirect, from the posterior columns (and their nuclei) to the cerebellum The existence of these tracts is denied by the researches of Mott Sherrington Tooth, Van Gehuchten and Bruce and confirmation is lent to their studies by our knowledge of the function of these tracts as worked out by Petren, Head and others These tracts, it appears subserve the sense of pressure the recognition of the size shape and form of objects and the appreciation of the point of contact These sensations are, however never disturbed in lesions of the cerebellum

The book is based on the reports of eighty-six cases of cerebellar abscess, collected from the literature since 1906 It is noteworthy that optic neuritis which is practically constant and intense in cerebellar tumors has been noted in only fourteen out of the eighty-six cases of cerebellar abscess reported This is all the more remarkable in view of the fact that the other symptoms of intracranial pressure such as headache vomiting vertigo and bradycardia, have been observed with comparative frequency

The Problems of Physiological and Pathological Chemistry of Metabolism for Students Physicians Biologists and Chemists By Dr Otto von Furth Professor Extraordinary of Applied Medical Chemistry in the University of Vienna Translation by Allen J Smith Professor of Pathology University of Pennsylvania Cloth Price $6 Pp 667 Philadelphia J B Lippincott Company 1916

Von Furth s original work, published as a series of lectures in Germany three or four years ago was at once recognized as a masterly survey of the many puzzling problems in the difficult but fascinating field of biochemistry The judicial logical, clear cut reasoning, and especially the lucid and stimulating presentation, stamped the work as a model of its kind and one which was certain to have a powerful influence in the development and broadening of interest in physiologic and pathologic chemistry The translator and the publisher have done a distinct service for medicine in making this valuable work available to a great number of readers who otherwise would not have become acquainted with it Von Furth's "Probleme' may be looked on as an extension and revision to date of the field covered in von Noorden's work on metabolism the translation of which noticeably stimulated American medicine The original work consisted of two volumes, the first discussing especially the chemistry of tissues, the second dealing with normal and pathologic metabolism Only the second volume obviously of greater immediate interest to physicians has been translated The subjects covered include digestion autolysis urinary constituents purin metabolism and gout carbohydrate metabolism and diabetes fat metabolism and obesity, acetone bodies and acidosis nutrition, fever, and oxidative processes Probably no other work considers the present state and future possibilities of these topics so well and at the same time so readably The translator has succeeded well in rendering the easy, interesting style of the lecturer into English In spite of a statement to the contrary, it would seem that the necessary annotations to bring the work quite up to date would have added to its value Von Furth shows an excellent familiarity with the work of biochemistry done in this country

The Pathology of Tumors By E H Kettle M D B S Assistant Pathologist St Mary s Hospital Medical School Cloth Price $3 Pp 224 with 126 illustrations New York Paul B Hoeber 1916

This book gives a straightforward account of tumor pathology as understood at the present day Its attitude in regard to all disputed and unsettled problems is safe and sane, and it gives as much information as is possible in the brief limit of the volume The entire sum of our knowledge of tumor pathology is so great as to require many large volumes for its full presentation as is demonstrated by the massive works of Borst and Wolff For those wishing a concise, readable and thoroughly trustworthy discussion of tumors Dr Kettle's small treatise can be recommended without reservation One entertaining misprint under Figure 71 shows a psammoma with many filamented psammoma bodies

Miscellany

THE IMPORTANT FACTOR IN DEALING WITH TUBERCULOSIS

GEORGE THOMAS PALMER, M D
President of the Illinois State Association for the Prevention of Tuberculosis Director of the Springfield Open Air Colony
Springfield Ill

If I were asked to write the most significant chapter on the treatment and the prevention of tuberculosis, it would be this chapter If I were asked to set forth the most important truth regarding the disease for the consideration of the layman the sociologist the physician and the purely scientific man that chapter would have nothing to do with bacteriology serums vaccines climate outdoor living or diet If I dealt with pathology at all I should ignore the lungs, the glands and other structures ordinarily affected by tuberculosis, and should dwell on the weakness, if not the pathology of the human mind On that—on mental instability and moral unreliability—I should place the blame for the distressing and tremendously costly delay in adequately meeting the tuberculosis problem

If the mental—the human side of tuberculosis, could be effectively presented to our learned, deliberative bodies of medical men it would go farther toward obtaining early diagnosis and accurate treatment than all of the purely scientific lore we now possess

No stone must be placed in the way of those who laboriously seek the one great specific, but a clear understanding of the conditions which perpetuate the disease and which stand in the way of successful treatment is more important today than all of the learned facts obscured by the technical verbiage of our modern alchemists The scientific contribution to tuberculosis has been enormous but the real warfare against the disease will not be fought in the laboratory The places in which it must be fought out are in the public schools, in the streets, in the homes in the doctors offices in the churches in the secrecy of the closets in which men search their souls and struggle with their consciences There must be a thorough course of mental and moral education in which both physicians and laymen should occupy the students benches Our present knowledge of diagnosis and treatment limited though it may be, is adequate for a reasonably successful warfare against the disease, if physicians and people were ready to accept that knowledge and act on it

How to bring about this moral and intellectual awakening among medical men and the people should have an important place on the programs of the most learned and serious-minded medical societies of the nation, simply for the reason that it has more to do with the cure of disease and the saving of human life than any other problem they can consider

It is the custom of scientific men in presenting facts and theories for the consideration of their confreres to support their contentions with case histories Perhaps when this simple and tremendously important truth is said before the councils of physicians, it will be supported by such histories as these which have been taken from the records of my cases during a period of two weeks

REPORT OF CASES

Case 1—*History*—A railroad man aged 48 married and father of four young children had pneumonia three times the last time (December 1915) remaining ill for three months In 1900 he was 'down with chills and completely lost his voice for three months He had coughed for the past seven months (since last pneumonia) and produced large amounts of sputum The normal weight was 180 present weight 131 temperature 99 6 pulse 100 The sputum contained tubercle bacilli There was dulness in both apexes with moist rales The diagnosis of moderately advanced tuberculosis plus was rendered indisputable by sputum examination All facts were laid frankly before the patient

Human or Mental Phase—The patient was unable and unwilling to enter a sanatorium although assistance was offered When a nurse was sent to arrange living conditions *for him* at home he refused her services and declared that the diagnosis was wrong and that he would continue to work When urged to consult another competent physician to confirm the diagnosis he refused to do so He would receive no suggestions as to coughing disposal of sputum or protection of his wife and family Finally he admitted that he had seen another physician who advised him to settle up his affairs as he had only a short time left to work

Causal Factors of Present Hopeless Condition —1 Delay in diagnosis which was so late (probably sixteen years too late) that outlook was discouraging at best. 2 Hopelessness of prognosis made by last physician 3 Lack of knowledge of tuberculosis and mental strabismus on the part of the patient

Case 2 —*History* —A man, aged 24 had lost weight and complained of poor appetite and constant weariness Finally while working he had a slight hemorrhage The young man attributed this to his throat and in this his physician agreeably acquiesced The general condition was such that suspicion was aroused sufficiently to have a sputum specimen examined There were no bacilli present in the first specimen A second was not taken Growing weaker, the young man asked for a vacation and suggested that he go into camp with the state militia of which he was a member In this he was encouraged by his physician on account of the exercise and fresh air in a tent (!) During the first evening in camp the boy had a profuse hemorrhage Diagnosis of moderately advanced pulmonary tuberculosis was made by a consultant who was called in after the general alarm caused by the second hemorrhage and the boy was placed in a sanatorium

Human or Mental Phase —While strongly suspecting he was tuberculous this young man persistently refused to see any physician especially familiar with tuberculosis He said he did not want to be *told* he had the disease An interesting question arises in the attitude of the physician in (*a*) agreeing with the patient s very improbable explanation of his first hemorrhage (*b*) being content with one sputum specimen in a case highly suspicious and (*c*) concurring in the exceedingly injudicious course of exercise of militia camp life for a tuberculous person This young man was saved from the hopeless stage by fortunately having a profuse hemorrhage early in his misguided course

Case 3 —*History* —A man aged 26, single chauffeur, with no relatives or close friends in this country, had steadily lost ground since 1914 when he had a severe attack of measles He had pleurisy with effusion two months ago indigestion for a year or more and took cold easily He had lost 17 pounds in the last six months his voice was husky appetite finicky he vomited on coughing he had coughed for two months there was pain in the left chest the temperature was 101 pulse 90 the sputum contained tubercle bacilli chest findings were very slight He had chest examination a short time before and physician stated no diagnosis but certainly *not* tuberculosis A diagnosis of moderately advanced tuberculosis, plus, was made and the patient was sent home and to bed

Human and Mental Phase —When a nurse visited this patient to arrange for sanatorium care the patient had gone to work denying absolutely that he was tuberculous Another physician had confirmed the patient s own diagnosis of bronchitis and stomach trouble ' (!) The patient stated that he had come to the dispensary merely to prove that he did not have lung trouble He deeply resented the diagnosis of tuberculosis and now does not speak to the physician who made that diagnosis Persons for whom this boy worked ' hardly thought it likely that he had tuberculosis and said that even if so the exercise of caring for the car outdoors would be beneficial It may be noted that these are educated and generally intelligent people

Causal Factors of Present Hopeless Condition —1 Delay in diagnosis, which should have been made two years ago 2 Ignorance and mental squint on the part of the patient 3 Opinion of the first physician that the case was not tuberculous and willingness of the last physician to concur in the obviously absurd self diagnosis of bronchitis and stomach trouble ' 4 Ignorance of educated ' employers that outdoor exercise can be safe for a tuberculous person carrying a high temperature This young man will doubtless die

Case 4 —*History* —Woman aged 16, clerk in department store, had a severe attack of grip a few months before followed by pleurisy She had lost weight and complained of weariness and nervousness since the grip attack Her voice was husky at times there was a hacking cough particularly after meals and a moderate quantity of sputum containing tubercle bacilli There was pain in the left side at the seat of previous pleurisy Temperature was 100 pulse 112 Chest findings were slight There was muscle spasm in the left upper back A diagnosis of moderately advanced pulmonary tuberculosis was made indisputable by the presence of bacilli in the sputum

Human and Mental Phase —This young woman is engaged to be married and on account of feeling so bad had asked for her vacation early so that she could take a two week automobile trip over dusty Illinois roads. The girl was told that she must go to bed outdoors at once and was told that she would be seriously ill with tuberculosis if she did not do so A nurse was to have been sent to arrange the details of her living The following day the girl s father a bartender called over the telephone stated that the nurse need not come that in his opinion the girl did not have tuberculosis, and that he had advised her to go on the automobile trip originally proposed The attitude of patient and father was resentful The girl will probably die

Causal Factors in Present Hopeless Condition —1 The mental attitude of the patient and parents, denying the unquestioned presence of tuberculosis, and resenting the diagnosis This is a very common feeling among people even of considerable education It must be overcome by publicity in which the family physician must take an active part

Case 5 —*History* —A man aged 43, train dispatcher father of three young children whose father died of complication of diseases " suffered from rheumatism of the left shoulder for a considerable length of time and one year before had a profuse hemorrhage It was diagnosed by the attending physician as nontuberculous bronchial hemorrhage The patient continued at work without objection from the physician Six months after the initial hemorrhage, there was a well established cough with profuse sputum, at times streaked with blood, and there were periods of definite hoarseness The patient had been steadily losing ground No sputum specimen was examined Following a second hemorrhage with chill and fever six months after the first hemorrhage the patient stopped work because he was physically unable to continue No diagnosis was made or, what is equivalent none was announced to the patient or to members of his family Another physician was employed who made a diagnosis of pulmonary tuberculosis and ordered the patient to sleep outdoors, to take milk and eggs and *to work in the garden* He also administered tuberculin The patient was hemorrhagic and had high temperature at the time The actual diagnosis was advanced pulmonary tuberculosis, very active.

Human and Mental Phase —This patient is reasonable and intelligent he accepted the actual diagnosis calmly and settled down to a prolonged period of rest in bed without discussion He expressed regret that he had not known his actual condition sooner

Causal Factors in Present Hopeless Condition —1 Failure of physician to advise patient of diagnosis at least one year before breakdown 2 Permission of patient to work after the first pulmonary hemorrhage 3 Permission of patient to work in the garden after breakdown and when hemorrhagic and having fever 4 Administration of tuberculin when patient had a tendency to hemorrhage and had elevated temperature

CONCLUSIONS

1 The most important factors in meeting the tuberculosis problem—with which only the prevailing carelessness of diagnostic methods can compare—are the mental attitude of many laymen and the moral and mental attitude of many physicians toward the disease

2 There is a decided tendency to make self-diagnoses and to deny a diagnosis disagreeable to them on the part of laymen otherwise ordinarily intelligent

3 Aside from the lack of knowledge as to making the diagnosis, which is, in a way, excusable, there is a tendency on the part of many physicians to do one of several things wholly inexcusable

(*a*) To make examinations so superficial and hasty in character that they are useless, regardless of the knowledge and skill of the examiner

(*b*) To make negative diagnosis based on such wholly inadequate examinations

(*c*) To make false or deceptive and obviously absurd diagnoses—"weak lungs" "threatened lung trouble," etc —for the purpose of lulling the patient to a false sense of security

(*d*) To concur in the obviously ridiculous self-diagnosis of patients for the purpose of retaining their friendship or patronage

4 There is also an astonishing lack of appreciation of the danger from the employment of exercise or tuberculin in those cases in which there is any degree of disease activity It is possible that more harm is done by the use of tuberculin in the wrong class of cases than there is good from its use in the right class of cases It is likely that more harm is being done by exercise than there is good accomplished by open air life

Recovery of Adult from Meningitis After Intraventricular Injection of Antimeningitis Serum

Verbizier and Chauvel report a case of epidemic meningitis of the "walled off" type, in a man of 43 Intraventricular injection of the antiserum was followed by recovery—the first case of which they know in an adult They cite three successful cases in children on record The fact that the antiserum injected into the spinal cavity was not being absorbed first gave warning of obstructive trouble Its nonabsorption was manifest from the persisting yellow tint of the cerebrospinal fluid, this xanthochromia being an important sign of obstruction of communication Another sign of this was that the pressure in the fluid drawn by repeated lumbar puncture was much less each time The inefficacy of the intraspinal injections of the antiserum and the abrupt aggravation of the general symptoms confirmed the assumption that the meningococci were not being reached by the antiserum Still another sign was the fact that the patient did not have severe headache during and after the lumbar puncture, as headache is almost inevitable with lumbar puncture in meningitis, probably from change in the pressure in the ventricles as fluid escapes from the lumbar puncture opening In the case reported the meningitis was at the seventh day when the signs above described demonstrated that other measures must be resorted to. Under general anesthesia a semicircular incision was made in the upper part of the frontal bone, a little to the left of the median line, the convexity toward the back. A lumbar puncture needle was then pushed into the brain, slanting inward, toward the right auditory canal. At a depth of 5 cm. an aspirating syringe was attached and about 20 c.c. of a colorless fluid was withdrawn, and a corresponding amount of warm antimeningitis serum was injected and the flap sutured. The fluid contained innumerable meningococci. Gradual improvement followed to recovery in about two weeks. The only complication was retention of urine after the operation on the brain. Catheterization became necessary and led to slight and transient cystitis which soon yielded to the usual measures and clinically normal conditions were restored. The case is described in minute detail in the *Bulletins et memoires de la Société medicale des hôpitaux de Paris* 1916, xxxii, 1138.

Medicolegal

Powers of Health Officers and Boards of Health—Requiring Vaccination

(Board of Trustees et al. v. McMurtry et al. (Ky.), 184 S. W. R. 390)

The Court of Appeals of Kentucky affirms a judgment dismissing the petition of the plaintiffs in this suit which was brought by the board of trustees of the Highland Park graded common school district No. 46 and others against the members of the county board of health of Jefferson County and the county health officer, for the purpose of enjoining them from enforcing an order directing vaccination by a day named of all the children attending the school who had not been vaccinated within seven years. The court says that the health officer of the county is primarily the agent and executive officer of the local board of health, and is charged with the duty of enforcing such rules and regulations as the state board or the county board may adopt within the scope of the powers conferred on them by the statute. But the court is not prepared to say that without express authority from either the state board or the county board the health officer would have power to demand that each child enrolled at a public school shall bring a certificate of successful vaccination or be vaccinated by a certain date, or be denied the privilege of attending the school. By this the court does not mean to hold that before the health officer can act in any case he must be armed with express authority from one of the boards, because many matters might come up in connection with the duties of his office that he should be permitted to perform, in the exercise of a sound discretion and within the scope of his general authority, without having the express sanction of either the state or county board. Each of these boards is charged independently with preserving the public health and with taking such action as in the exercise of a reasonable discretion may be deemed necessary to suppress and prevent the spread of infectious or contagious diseases. The only substantial difference in their powers, in respect to taking such measures as may be necessary to conserve the health of the people of the state, is that the state board is invested by the statute with larger power and greater jurisdiction than the local boards. But the local boards may under the statute exercise the authority conferred on them without asking the advice or the consent of the state board. The court is further of the opinion that the language of the statute is broad enough to confer on the state board and on the local boards the authority to issue an order such as the one here in question when they believe there is reasonable apprehension of an epidemic of smallpox in a school district, and that the vaccination of the schoolchildren is the only means by which it can be prevented. The argument was made that this construction gives to these boards great power. This is true, but necessarily so. The conditions which they were created to deal with could not be successfully met, unless they had large power and discretion. In the very nature of things it would be utterly impracticable for the legislative department of the state to undertake to define the conditions that must exist before these boards could take such action as might be necessary to control situations that are constantly coming up in various forms, and so if these agencies of the state created for the purpose of conserving the health of the people are to accomplish the objects for which they were created, they must needs be given authority to take such prompt and effective action, in each case as it comes up, as in the exercise of their reasonable judgment and discretion may be deemed necessary to meet the exigencies of the occasion. They are not required to wait until an epidemic actually exists before taking action. Indeed, one of the chief purposes of their existence is to adopt and enforce such timely measures as will prevent epidemics. What they shall do and how it shall be done are matters left to their sound discretion. But of course these boards cannot adopt unreasonable or arbitrary rules or regulations or, without cause, harass the public or needlessly subject individuals to expense or inconvenience or act unless they have reasonable grounds to believe that the action taken is necessary to prevent or suppress the disease sought to be controlled.

Liability on Note Given in Buying Out Physician

(Harshbarger v. Eby et al. (Idaho), 156 Pac. R. 619)

The Supreme Court of Idaho affirms a judgment in favor of the plaintiff, a physician, who sued the defendants, a physician and his wife on a promissory note for $2,500 given as the balance of the purchase price agreed to be paid by the defendant physician for the business, property and good will of the plaintiff. The court says that an instrument designated a contract of sale, which was executed by the parties, set out in full and described the real and personal property purchased and the total sum to be paid for the business, the good will and the property enumerated, being $5,500, of which $3,000 was paid in cash. The defendants sought to introduce evidence of the value of each article of personal property and the real estate separately for the purpose of establishing that the business, personal property, real estate and good will purchased were not of the value that had been theretofore agreed on between the parties, but that the personal property and real estate were worth only $1,750 and that the business and good will were valueless, and that therefore the note in suit had been obtained without consideration. But it was not important that it should appear that there was a full consideration for the note, as the defense would fail if there was any consideration whatever for the note, no matter how small. This court has heretofore held that inadequacy of consideration is no defense to an action on a promissory note unless there was also fraud on the part of the promisee, that it is not the duty of the court to relieve parties from the obligations of their contracts fairly made because they are disadvantageous or foolish, but to enforce them, and that courts, both of law and of equity, refuse to disturb contracts on the grounds of mere inadequacy, whether the consideration is of benefit to the promisor or of injury to the promisee. It was not contended in this case that there was any fraud perpetrated on the defendants in the inception of the contract, but, on the other hand, it was contended that they did not receive the practice that the plaintiff had represented that he had enjoyed, that the good will of the business had not brought them the expected returns, and that collections were not as good as the plaintiff had claimed they were. These were not such statements as, under the facts in this case, would constitute fraud, even should it be conceded that fraud was properly alleged. The defendants had by their own showing ample opportunity to advise themselves on these matters. Moreover it was error, under the circumstances, to permit the defendant physician to testify to the value of each article of personal property and of the real estate separately, for the reason that the value of the business, property and good will had been fixed by the parties in the contract, and it varied the express terms of a written contract which was admitted by the defendants to be the contract entered into in which the price to be paid for the business the property and the good will was fixed.

Society Proceedings

COMING MEETINGS

American Academy of Ophthal and Oto Laryn Memphis Dec 11 13
American Association of Anatomists New York, Dec 27 29
Clinical Congress of Surgeons Philadelphia, Oct 23 28
Medical Association of the Isthmian Canal Zone, Ancon Dec 16
Society of American Bacteriologists New Haven Conn Dec 26
Southern Medical Association Atlanta Nov 13 16
South Surg and Gynec Assn, White Sulphur Spgs, W Va Dec 11 13
Western Surgical Association, St Paul, Dec 15 16

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS

Twenty Ninth Annual Meeting held at Indianapolis Sept 25 27, 1916

(Concluded from page 1252)

Rupture of the Cesarean Scar

Dr Abraham J Rongy, New York Spontaneous rupture of the cesarean scar occurs in about 3 per cent of cases, usually during labor, sometimes during the latter half of pregnancy, especially in the last six weeks Rupture will occur in cases which run an afebrile course and in which union of the wound was apparently by first intention One third of all cases in which operation is performed for reoperated section show evidence of inflammatory reaction in and about the uterine wound The result in such cases is a weakened scar Proper suturing of the uterine wound and exact approximation of the edges will not always prevent subsequent rupture of the scar The mortality rate of repeated section is smaller than that of primary cesarean section, because these patients are more carefully watched by competent men A patient who has had cesarean section should not be allowed to go through a tedious or severe labor If labor does not progress rapidly, repeated section should be performed When advising a patient to have a cesarean section, the management of subsequent pregnancies should be taken into consideration and discussed with one of the members of the family Fully 75 per cent of women who have had a cesarean section are delivered by repeated section during their subsequent labors Cesarean section creates a new problem for the woman, and therefore we must carefully weigh the indications before deciding on the abdominal route The dictum 'once a cesarean section always a cesarean section" holds true in fully 75 per cent of cases

Discussion on Uterine Rupture

Dr Palmer Findley, Omaha If ninety-seven women out of a hundred go through labor with a cesarean scar successfully without intervention, the thing to do is to put the woman in a hospital, if possible, and be ready to interfere, but we should not adopt the method of cesareanizing every woman who has had a previous cesarean scar in the uterus We should not be guided by any 3 per cent of changes except this we should take every precaution to safeguard the woman in the event of imminent rupture of the scar

Dr J Henry Carstens, Detroit I have had about fifteen patients on whom I have performed cesarean section a second time In all of the cases there was pelvic deformity Not one of them was cesareanized for placenta praevia or eclampsia I have these patients go to the hospital early, if possible, and operate on them two weeks before the expected time of labor

Dr Henry Schwarz, St Louis I endorse every word Dr Findley said Three years ago I did a cesarean section on a woman who had a temperature of 104 F She was intensely sapremic, with a dead macerated fetus in the uterus She was a young woman, and this was her first pregnancy After emptying the uterus and removing a subserous fibroid which was situated on the left side of the uterus close to the external os and was blocking the pelvis, and removing a smaller fibroid near the fundus, I closed the uterus I delivered this woman about seven months ago through the natural passages

Dr James E Davis, Detroit The problem from a pathologic standpoint is this first, a reduction of muscle tissue, a degradation of a normal tissue, then a degradation of the connective tissue by the interposition within the connective tissue cells of syncytial cells The connective tissue, while it may be in certain instances as strong as the muscle tissue, yet is not as resistant to the syncytiolysins It is a tissue of very low resistance so far as its ability to withstand pressure is concerned

Dr Maurice I Rosenthal, Fort Wayne The important thing is infection, and that infection is predisposed by intrauterine pressure If the lochia are kept free from the internal surface, the entire suture line closes together by the absence of the intra-uterine pressure, and that is a point in safeguarding against the infection of the wound and in securing perfect wound healing

Dr Irving W Potter, Buffalo I have done cesarean section on a number of patients a second time without any trouble You cannot see the scar, but if you feel from below up, you will find a thinning in many of the cases, although it is not enough to make any special difference

Gunshot Wounds of the Abdomen in Pregnant Women

Dr Lewis F Smead, Toledo, Ohio A woman was shot through the abdomen The bullet perforated the colon, the uterus, the placenta, and the hand of the child Mother recovered In cases of gunshot wounds of the abdomen during pregnancy, the uterus at full term should be emptied by cesarean section, and at earlier periods if the organ is badly injured A uterus during labor is liable to spread any infection which is free in the abdomen, and a pregnant uterus is therefore a menace to the patient if peritonitis develops Hysterectomy is usually not indicated unless the uterus is badly lacerated Drainage should always be used and irrigation very rarely

DISCUSSION

Dr John D S Davis, Birmingham, Ala A woman pregnant three and a half months, was handling a small rifle when it was discharged and the bullet entered the abdomen producing twenty-five perforations, six through the transverse colon, and nineteen through the small intestine She was brought a distance of 85 miles I saw her twelve hours after the reception of the injury Instead of doing two resections of the intestine, I took out 5 feet of the intestine between the nineteen perforations She recovered and gave birth to a living child at the ninth month

Version, With Report of Five Hundred Cases

Dr Irving W Potter, Buffalo In these 500 cases there was not a maternal death, there were no injuries to the mother's soft parts that required repair There were no alarming hemorrhages, and the period of involution was shorter than ordinary, with less flow during the puerperium The convalescence was more rapid, owing to the elimination of the shock experienced by patients going through a long second stage of labor There was also apparent greater strength of the patient at the end of the puerperium In reference to the fetus, there were fifty-seven stillbirths, the greatest cause being prolapsed cord, in thirty cases alone death was due to this cause

Blood Pressures During Operations

Dr Charles W Moots, Toledo, Ohio Having made observations and records of the pressures in 98 per cent of our cases for the past eight years, we have come to certain conclusions The systolic pressure alone is of very slight, if any value The diastolic pressure alone is of much more value than the systolic alone The pressure ratio is the essential factor and offers the earliest danger signal There are certain elements in technic which have marked and constant effect on the pressures These are as follows (*a*) the psychic or emotional state of the patient, (*b*) the position of the patient on the table, the extreme Trendelenburg being the worst, (*c*) overdosing by the anesthetist, (*d*) the amount of traumatism inflicted by the actual operation, such as cutting and tearing the tissues with scissors, the hands, and other dull instruments, the packing of large gauze packs instead of rubber tissue into the abdominal cavity, and (*e*) the preservation of the fluids in the body up to the hour of the operation, this being absolutely necessary to maintain the usual pressures

DISCUSSION

Dr R R Huggins Pittsburgh If any one cares to take the blood pressures of patients previous to operation, when he is suspicious of any weakness on the part of the circulatory apparatus of the patient if he will take the pressure pulse with the patient in the prone position and find that it goes down, that patient is a bad risk There will always be trouble, particularly if the inhalation form of anesthesia is used A patient with a blood pressure of 170 or 180, with low diastolic pressure, should always be watched The same is true of low blood pressure

Dr J H Carstens, Detroit I have for some time insisted on taking the blood pressure of patients a day or two before operation If a patient has a blood pressure of 170 it is dangerous to operate before adopting some measures to reduce it

Prolapse of the Uterus in Nulliparous Women

Dr Palmer Findley, Omaha One hundred and fifty-one cases of procidentia uteri in nulliparous women are on record In my judgment there is an element of infantilism in most if not all, the cases of procidentia in nulliparous women The fact that these women are sterile is highly suggestive Kepler collected reports of eighty cases of procidentia in nulliparous women and of this number thirty-eight were mentally defective In this group were dementia praecox imbecility, idiocy, chronic mania, hysterical insanity cretinism, and nervousness of high degree

Radium, a Palliative

Dr Douglas C Moriarta Saratoga Springs, N Y Radium overcomes the disagreeable odor which accompanies the breaking down of cancerous tissue Further it controls hemorrhage In six cases in which I used radium pain was relieved the odor was remarkably controlled hemorrhage ceased, and there was a change in or a disappearance of the local pathologic tissues Two patients died in coma two months after the treatment four are alive and hopeful In one case the uterine hemorrhage was not of cancerous origin but the condition was a terminal one I am sure the patient would have died had it not been for the use of radium In using radium it is possible to produce a toxemia which may prove fatal, and I am sure I have seen the end hastened in this way I would suggest two precautions when applying radium locally first a patient with a low leukocyte count should not be given prolonged applications and second it should be accompanied by the liberal administration of alkalies No case of this type is so desperate, and no postoperative condition so hopeless that radium should not be used with an expectation of the alleviation of the distressing symptoms

A Modified Gilliam Operation and Its Ultimate Results

Dr Albert Goldspohn Chicago An effective and lasting cure is best obtained through overcorrection suspending the uterus at a higher plane than it normally occupies by a substantial implantation of round ligament loops reenforced by their peritoneal covering into the recti muscles and their aponeurosis best after the Gilliam technic in addition to correction of the version To secure the desirable degree of anteversion and also to avoid intestinal complications the implantation should not be more than from 3 to 4 cm from the edge of the symphysis pubis and it should bring the distal unused segment of the ligament and its uterine origin both in contact with the abdominal wall The efficiency of this modification of the Gilliam operation is shown in the 127 examined cases including the double test of pregnancy of twenty one nearly all natural and mature births with a return of displacement in only 1 6 per cent with both pelvic and general health good or excellent' in 88 per cent improved in 10 2 per cent and unimproved in only 1 6 per cent in a total number of 164 cases observed from two to seven years, or over three and one half years on the average Its harmlessness is shown by the utter absence of any deleterious effects at all traceable to it in the twenty one births noted, and likewise from the absence of intestinal complications and of discomfort to the patients

The Surgical Treatment of Uterine Cancer

Dr J H Jacobson, Toledo, Ohio The radical abdominal operation thus far has given the highest percentage of cures in operable cases Until radium, Roentgen ray or Percy s operation shall have proved their superiority to operation their use should be limited to the inoperable cases There is abundant clinical evidence at hand to prove the value of radiotherapy, it therefore seems logical to follow every palliative or radical operation with radiotherapy

The Mechanics of the Stomach After Gastro-Enterostomy

Dr J H Jacobson and Dr John T Murphy Toledo, Ohio All patients examined in this series were well Gastro-enterostomy openings properly made and placed do not obliterate, and functionate equally as well in the presence of either an open or closed pylorus To secure the maximum amount of drainage, the opening must be of ample size and placed as near the pylorus as possible, preferably in the antrum pylori Such openings must not be made on the fundus of the stomach or on the lesser curvature Gastro enterostomy is essentially a drainage operation Serious distention in the jejunum does not occur The food is seen to pass rapidly through the many loops of the small intestine before it stops Even in those patients who are entirely relieved of their former symptoms, food can be forced backward into the stomach from the jejunum, and although this can be done easily, such regurgitations do not seem to make any difference

Excessive Drainage Complicating Surgery on the Common Bile Duct

Dr J E Sadlier Poughkeepsie, N Y Both of my cases were long-standing cases of common duct infection and incomplete obstruction The latter was a result of the duct being filled with gallstones In each case there was well-marked dilatation of the duct In one case there was an alcoholic history and in the other case there was involvement of the pancreas These two conditions can be eliminated as complete causative factors but cannot be disregarded as partial influencing conditions in provoking the excessive drainage I am unable to state the positive cause for this complication, but I am disposed to believe that it is due to back pressure Is it not probable that in partial obstruction to the outflow of the bile there occurs a dilatation of the smaller biliary radicles in the liver? Increased back pressure, which when suddenly relieved by operative removal of the obstruction produces a condition of venous engorgement of the liver with resulting outflow of fluid which is more in the nature of a transudation than an actual biliary secretion and this coupled with a back flow of pancreatic fluid through the dilated duct would account for the excessive drainage In our operative work on the common bile duct we must consider the possibility of excessive drainage and be prepared to combat it before the patient becomes dehydrated to the danger point

Inguinal Hernia Attached to the Cord, Undescended Testicle, Uterus, Tubes and Broad Ligament

Dr Edmund D Clark Indianapolis My case is a very good example of hermaphroditism in a man and it illustrates what is exceedingly rare in the hernial sac of a male The external conformation of the patient was that of a normal male The hernial sac contained a uterus broad ligament and fallopian tubes Although he has been married to an apparently normal woman for six years no pregnancies have resulted

Relation of So-Called Ether Pneumonia to Pelvic and Abdominal Surgery

Dr William Edgar Darnall Atlantic City N J Ether is administered in most hospitals many times every day yet the condition known as ether pneumonia is a rare occurrence compared with the number of ether administrations given If the pneumonia were the result of the ether, we ought to expect to have many cases every week Rovsing proved experimentally that although ether does occasion increased secretion of the salivary glands of the mouth, the larynx, the trachea and the bronchi are not irritated at all even when the animals are killed by administering ether through a tracheotomy tube until they are dead The only way, therefore, that ether can produce pneumonia is by the aspiration of the accumulated saliva in the throat, usually the result of technical error on the part of the anesthetist, who should not allow the secretion to accumulate in the throat Such secretions may be infected from the buccal cavity It is quite possible that tonsillar infections and involvement of the nasal accessory sinuses or the teeth may be one of the causes of postoperative pneumonia which has been attributed to ether It would seem proper to conclude, therefore that cases of pneumonia following operations are not due to the ether The term "ether pneumonia" should be discarded and forgotten Postoperative pneumonia occurs with great rarity, except after abdominal operations, and is then probably due to an infection already existing in the bronchi or lungs at the time of operation, or to imperfect aeration and ventilation of the lungs by reason of the fear of taking deep breaths after a laparotomy, but most often such pneumonia is a secondary infection of the lung following a septic abdominal condition

Removal of the Appendix for the Cure of Trifacial Neuralgia and Other Nerve Pain About the Head and Face

Dr Maurice I Rosenthal, Fort Wayne I do not claim that we have established a new pathology for trifacial tic and kindred affections, but I do claim that in seven cases we fixed the pathologic condition in the vermiform appendix, even though the physical and subjective evidence of appendicitis was so obscure as to be entirely overlooked In all but one case there was present almost symptomless chronic appendicitis of the obliterating type, the odd case was a symptomless pus case One case was on the order of migraine or so called sick headache It has not been uncommon in my experience to note the cure of migraine and so-called sick headache after removal of a diseased appendix It is quite possible that many of these cases come under the same pathology as does tic douloureux and other nerve pains about the face and head

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INDIANA STATE MEDICAL ASSOCIATION

Annual Meeting held at Fort Wayne, Sept 27 29 1916

(Continued from page 1251)

The president, **Dr George F Keiper**, LaFayette, in the Chair

Influence of Modern Immunity Research on Surgery

Dr Murray N Hadley, Indianapolis The question of immunity should be viewed in the broad, biologic sense By the biologic conception of disease we mean recognition of the fact that the defensive mechanism of the individual must be increased The problem of surgical infections has been shifted to the field of biochemistry We now recognize that when an individual becomes the host of pathogenic micro-organisms his entire physiochemical balance has been disturbed and under such conditions recovery is to be sought by resort to those remedies and measures which strengthen and stimulate normal body defense

Dr. C B Danruther, Laporte Immunity in its broadest sense is the effective resistance of the host against any deleterious substance, in the usual and more restricted application, the resistance of the host to infective micro-organisms and their products A more recent theory advanced by Vaughan explains all forms of immunity by the inability of a micro-organism to grow in the body of the host because of the presence or lack of certain ferments which either destroy the organism directly or prevent it from obtaining suitable nutrition The fundamental principles are the same, being one complex set of phenomena viewed from different angles

DISCUSSION

Dr V H Moon, Indianapolis The specificity of immunity lies at the very foundation of a large amount of treatment of infectious disease To establish an immunity by therapeutic means, such as the application of vaccines, we must use the causative organism of that infection as our antigen

Dr George Spohn, Elkhart When an appendix is removed, and there is infection existing before the operation, would there be any advantage in using vaccines?

Dr Leonard F Schmauss, Alexandria The principles Dr Hadley emphasized ought to be encouraged, but I would caution against going to the other extreme I would not want to discourage the use of antiseptics, especially in infected wounds, and depend on the outside application of salts to draw away the infection

Dr M N Hadley, Indianapolis The question of vaccines in acute appendicitis involves their use in all acute infections If you agree that the use of vaccines is indicated in an acute surgical infection, you would use them under these circumstances It seems to me not a wise thing to do The question of antiseptics must be governed by facts All wounds are treated at first with antiseptics, but the problem is entirely different then to what it is forty-eight or seventy-two hours later when the organisms are scattered through the tissues If you can use antiseptics immediately or within six hours after the wound has been made, use them

Visceral Syphilis

Dr George W McCaskey, Fort Wayne The treatment of visceral syphilis, with one or two very notable exceptions, is simply the treatment of syphilis By a judicious combination of mercury and the iodids with salvarsan and neosalvarsan, the patient is best served

DISCUSSION

Dr. A W Brayton, Indianapolis I consider syphilis wonderfully amenable to treatment, as much so as typhoid The only drugs which destroy the syphilitic organism are the mercurial salts and the arsenical compounds introduced by Ehrlich—all inexpensive and easily given We must diagnose our cases carefully Patients must be kept under observation for several years Syphilis, like tuberculosis, may be dormant for fifty years and then break out in various forms

Dr Henry A Christian, Boston The Wassermann test has both increased and decreased our diagnostic difficulties In cases of latent syphilis we have received great assistance, because there was nothing in the case prior to our securing a positive Wassermann that would indicate that the patient had syphilis On the other hand, a positive Wassermann brings about the necessity of deciding whether that has anything to do with the patient's present condition Sometimes it does, and sometimes it does not I know of nothing that requires keener diagnostic skill than that decision When we weigh the two sides against each other, however, I think the aid we have received outweighs the difficulties added The Wassermann should be a routine diagnostic measure in all cases in which any difficulty exists

Dr Charles P Emerson, Indianapolis There is value in the Wassermann test, but not nearly so much as we sometimes try to obtain from it A Wassermann which is not 100 per cent positive, or a negative Wassermann, should be considered as though the test had not been made On the other hand, not all patients showing a positive Wassermann are suffering from syphilis The fact that a patient has a 100 per cent Wassermann only opens up the possibility of syphilis, and we must not take the Wassermann test as adequate diagnosis without considering the essential physical signs The earlier we diagnose syphilis and begin our treatment, the less damage will be done, especially is this true of the central nervous system and the arterial system

Dr F W Cregor, Indianapolis If we look on the Wassermann test as an aid to diagnosis and not a guide to diagnosis, I think we shall place it in the proper light Unquestionably we find more visceral syphilis in women than in men, especially about the pelvis and lower bowel, owing to the fact that women suffer more from constipation and the consequent irritation, and syphilis is prone to manifest itself at points of irritation

Dr Albert E Sterne, Indianapolis We should regard laboratory findings (in syphilis diagnosis) wholly as symptoms which may or may not be present, just as any other set of symptoms The fact that a symptom is absent does not exclude a disease so long as other symptoms speak for the presence of that disease The absence of findings in a Wassermann test does not necessarily mean that there is no syphilis, its presence means that there is syphilitic infection, but it may not be active, and other symptoms must be taken into consideration with this test I want to emphasize the fact that the central nervous system is invaded early in the course of syphilis, and it is a very great mistake to neglect the routine serologic examination until the symptoms of lesions of the central nervous system have been definitely shown If there is a positive Wassermann reaction of the spinal fluid, that is the time when intraspinal treatment should be given and not several years later It is too late to expect definite improvement when the patient shows unmistakable signs of tabes and paresis With our old methods our results were almost as good as they are today After several years of careful investigation we cannot say that we can register a single cure in instances of syphilis of the central nervous system by our newer methods of treatment I believe we delay the results, but we cannot say that we find a single cure

Necessity of Coordinating Methods in the Definitive Diagnosis of Lesions in Pulmonary Tuberculosis

Drs F B Wynn and R C Beeler Indianapolis Formerly the whole burden of responsibility for diagnosis and treatment was placed on the pathologist Now we have reached the group of serologic tests, and on them are being placed most onerous burdens Equally interesting and instructive are the revelations coming through physical laboratory methods The knowledge obtained through the Roentgen ray has been so marvelous oftentimes that it is not strange to find overzealous roentgenologists making unwarrantable claims for its efficiency in diagnosis, and just as often practitioners rely on this "short-cut" to diagnosis, neglecting time-honored methods and defeating broader ideals in diagnostic procedure Among the particular diseases in which this error has been committed, pulmonary tuberculosis has been most sinned against It is not fair that the practitioner should put on the laboratory the whole burden in the diagnosis of tuberculosis He should exhaust every other means to determine the truth Careful examination of sputum does offer an absolute means of diagnosis in a majority of cases, but negative reports have often led practitioners to give unwarrantable assurance that tuberculosis does not exist A careful study of the possible sources of infection, due consideration to the mode of life and previous diseases, and careful analysis of the development of the complaint will often give a clue to diagnosis when laboratory methods fail

Radium Therapy

Dr. T C Kennedy, Indianapolis The great value of radium in cancer can be judged only by keeping constantly in mind the fact that only the hopelessly inoperable, or patients with postoperative recurrences are sent for radium therapy If we relieve a small percentage and occasionally cure a patient who has been operated on or been refused operation on account of the seriousness of the condition, we have done much for suffering humanity

DISCUSSION

Dr M I Rosenthal, Fort Wayne Radium is a most valuable adjunct to surgery in the treatment of malignant growths, fibroids and many other conditions A woman with cancer of the uterus was operated on by the radical method, made a beautiful recovery and remained well for four years, then returned with a recurrence in the scar—a rare occurrence We used radium, and after the ordinary treatment this carcinomatous condition has evidently disappeared In cases such as this, radium is the only treatment, it is the last resort

Diagnosis in Certain Gastric Disorders

Dr. H H Miller, South Bend In the diagnosis of diseases of the digestive tract, early diagnosis is of prime importance Most of the failures are due to carelessness in not getting all of the evidence and then considering it as a whole Exploration should always be considered when the diagnosis remains in doubt after every other means has been used to come to a decision

DISCUSSION

Dr A B Graham, Indianapolis The great mistake today is insufficient cooperation between internist and surgeon, especially in the treatment of gastric disorders We criticize each other instead of getting together, working hand in hand, and trying to avoid the mistakes which we are making as individuals The Roentgen ray is the most valuable method of diagnosis in diseases of the gastro-intestinal tract, but we must all work together—surgeon, internist and roentgenologist

Dr Miles F Porter, Jr, Fort Wayne A most important point in diagnosis and one often neglected is history taking It is done too hurriedly It is a good plan to take a history a week or ten days after the first time It does not sound the same I think it would be a fairly safe rule in the majority of gastro-intestinal disorders of the subacute or chronic type to make your diagnosis, make your plans for what you intend to do and then start all over again You will notice a difference It is the same patient and the same doctor, but the history is different

Dr F W Foxworthy Indianapolis The surgeons of the United States Army make an effort to prevent these gastro-intestinal disturbances by correction of diet, so that they will not have to make this diagnosis, and I think the future will show that to be the proper method of treatment—prophylactic instead of curative

(*To be continued*)

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Sixty Sixth Annual Meeting held at Scranton Sept 18 21 1916

(*Continued from page 1181*)

Acidosis

Dr J Harold Austin Philadelphia Acidosis is an abnormal diminution in the amount of carbonates and phosphates of the blood In severe acidosis the deepened respiration at an increased rate constitutes the most characteristic feature of the clinical syndrome The term "acid intoxication" may be used for the severe grades of acidosis with a clinical syndrome of which the most characteristic feature is the peculiar hyperpnea without cyanosis In the severe acid intoxication of childhood with acetonuria, the withdrawal of fats, or perhaps of all food except glucose, the washing out of the stomach and the cleansing of the intestinal tract with castor oil and enemas are of first importance The administration of alkali may bring about a cessation of the hyperpnea of acid intoxication, and diminish the laboratory evidence of acidosis In the severest cases of acid intoxication however death occurs even when the urine has been rendered alkaline This is probably due to the fact that although the buffer value of the blood has been restored, the altered condition in the tissue cells is less readily reached or the injury done is irreparable

DISCUSSION

Dr Alfred Stengel, Philadelphia When we are directing our therapeutics against a definitely ascertained disease, we are apt to overlook the possible presence of subsidiary conditions much more important than the original disease In treating cardiac decompensation, under certain circumstances such a patient may be more seriously threatened by the acidosis encountered than by the cardiac decompensation Similarly in renal disease, the patient may be more seriously threatened if such a thing is possible, by the accompanying acidosis than by the renal disease Occasionally, patients with acid intoxication do recover under treatment I have seen two such instances The general attitude of the medical profession that patients with diabetic coma cannot recover is wrong The severe intoxication should be fought to the end, even though we may be defeated in ninety-nine cases out of a hundred

The Failing Heart

Dr Howard S Anders, Philadelphia The failing heart indicates loss of reserve force and is almost invariably curable Heart failure represents the end-result The stability and expectancy of life are dependent not alone on mere ventricular power and vigor, but also on a permanence of reserve force A fibrillatory character of ventricular function is probably one of the best danger signals of a failing heart One of the most palpable causes of a heart that is failing functionally is that of intestinal autotoxemia Digestive disturbances with gastric and colonic distention and acidosis are also frequent elements in failing heart

DISCUSSION

Dr James D Heard, Pittsburgh The underlying pathologic process in cardiac failure may elude the investigator even after the most careful histologic examination Of the many tests for determining latent heart weakness, we have none that are satisfactory The method of Barringer of estimating functional capacity of the heart through a study of the delayed rise in blood pressure appears to be worthy of further examination The early recognition of alternation of the pulse is of great prognostic value The longest survival of any case recorded in which this condition was found was that of a patient of Tabora who was alive six years after the arrhythmia was demonstrable It is probable that the majority of such patients will not live more than a year after the onset of the alternation

Typhoid and Typhophors

Dr Samuel G Dixon Harrisburg In 1906 there were in Pennsylvania 3 917 deaths from typhoid, in 1915 they numbered 1 025 In 1906 there were reported sick of typhoid 24,471, in 1915 the number was 8 048 One source of danger against which no adequate protection has been found is the carrier For one who carries typhoid the name of typhophor is proposed as brief and distinctive The law of 1915 makes possible the exclusion of typhoid carriers from the kitchen and other parts of hotels and restaurants Similar legislation concerning the producer or distributor is desirable The examination of each potential carrier would be a great gain in controlling typhoid The protection of our watersheds from pollution and against possible carriers among construction and repair workers is a question of much importance

DISCUSSION

Dr Alfred Stengel Philadelphia The employment of kaolin in these cases on the chemical principle of absorption offers a beautiful illustration of the introduction of physical chemistry into medicine and surgery, the credit of which is due to our bacteriologists Kaolin may also be used for spraying the throats of diphtheria carriers Possibly the value of our use of bismuth and other inert substances in the treatment of gastro intestinal disturbances may also rest on the principle of absorption

Significance of Hunger Pain

Dr J W Luther Palmerton I am inclined to agree with Einhorn, who states that Moynihan's syndrome may occur with or without ulcer, and favors the theory that hunger pain is caused by a spasm of the pylorus induced by hyperchlorhydria which is often associated with hypersecretion and which is in a large percentage of cases complicated by a juxtapyloric ulcer When 'hunger pain and food relief' occur with a painful pressure point and occult or microscopic blood in the feces the roentgenologic examination shows gastric hypermobility and a shortened duodenal cap, and possibly also when Einhorn's string test, if used, is positive a diagnosis of duodenal ulcer may be made, though many authorities claim that even then it cannot be accurate and that a diagnosis of the position of the ulcer by the lateness of the onset of pain is impossible

DISCUSSION

Dr William H Howell Altoona Hunger pain signifies duodenal ulcer It is not pathognomonic by any means but helps to confirm suspicions The Roentgen rays and a careful and thorough history of the case are essential to a diagnosis The symptom should never be drawn from the patient, but should be volunteered by him

Dr J B McAlister, Harrisburg As hunger pain is most commonly encountered in cases of duodenal ulcer, it is a most valuable symptom in the diagnosis of that disease Yet pain which closely resembles it is often present when a patient is suffering from other affections Hunger pain is not an accompaniment of any definite chemical state of the stomach As a rule acidity is high, but even low degrees have been found Hunger pain may be a symptom of acid gastritis, and is also found in catarrhal gastritis, it is also present in gastrectoptosis, enteroptosis or nephroptosis In hyperorexia, or parorexia, the sensation of hunger might become so intense as to amount to actual pain Physicians are warned against making a diagnosis of gastric neurosis because a patient happens to be a neurasthenic The patient may present the appearance and symptoms of a neurasthenic and yet harbor a gastric ulcer or carcinoma

Dr J A Lichty, Pittsburgh I agree fully that the etiologic interpretation of this symptom is not clear, and I think that the interpretation Luther gives is probably the correct one There is one point to which I do not believe I could go with Dr Luther and that is that it is due to a hyperchlorhydria Pylorospasm can be caused by other conditions than hyperchlorhydria Mr Moynihan's expression of some ten years ago that hunger pain is duodenal ulcer can certainly not be substantiated

Dr Ernest Laplace Philadelphia I think that by common consent the pain described as hunger pain is usually a contraction of the pylorus Surgically speaking I have almost never failed to find some sort of a lesion around the stomach or even down as far as the rectum when there has been persistent hunger pain

Dr Herbert B Gibby, Wilkes-Barre There is no doubt that the most prominent symptom in ulcer is hunger pain but I cannot agree that pains of this character mean only duodenal ulcer It may mean a gastric ulcer

Facts and Fallacies Concerning Electrotherapeutics

Dr W L Clark, Philadelphia Progress in the use of electricity in therapeutics has been retarded by the ancient teaching that electricity is purely psychic in its action by the absence of teaching of the subject in the majority of medical schools and by the prejudice which has arisen on account of the association of electricity with irregular practice I would urge on superenthusiastic electrotherapeutic advocates the necessity of being guarded in their claims, and that teaching in electrotherapeutics be established in all medical schools Electricity, though always the same force, when modified with knowledge intelligence and skill may be made to produce different effects, and it is on this principle that the whole superstructure of electrotherapeutics rests The effects produced by electricity may be classified as mechanical chemical thermic actinic and psychic Some of the future possibilities of electricity in therapeutics are the abstraction of metallic poisons from the body by ionization safe local and general anesthesia with loss of consciousness and relaxation, and relief of pain and the production of sleep, thus lessening the need of opiates

DISCUSSION

Dr J Torrance Rugh Philadelphia The trouble partially lies with the electrotherapeutists themselves To make unguarded statements such as I hear from some of the electrotherapeutists is unwise

Dr G G Davis, Philadelphia There is no reason why we should not have a chair of electrical therapeutics in our colleges in the same way that we have the other specialties

Value and Limitation of Radiotherapy in Gynecology

Dr Floyd E Keene, Philadelphia I analyzed 116 cases Sixty-nine cases were of malignant growths of the vagina, cervix or urethra and forty-seven cases of benign hemorrhage of myomatous or myopathic origin The majority of cases received from 85 to 110 mg of radium for twenty-four hours In one case of cauliflower growth, in a woman of 28 who was six months pregnant 210 mg were applied with complete cure. The only immediate effects were nausea and vomiting which usually ceased from twenty-four to thirty six hours after removal of the radium. In 44 per cent of cases of cancer there was complete healing and in only two cases was there no benefit. In not a single instance has there been a failure to check bleeding in the case of benign hemorrhage. Mild symptoms of menopause were developed in ten cases. In cancer of the fundus operation is preferable to radium, this is also true of early cervical cancer. In cases of small myoma when the only symptom is hemorrhage 100 per cent of cures may be expected. This work is still on probation.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk ( ) are abstracted below

American Journal of Medical Sciences, Philadelphia

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1 Diagnosis and General Treatment of Syphilis J A Fordyce New York—p 469
2 Treatment of Syphilis of Central Nervous System H F Swift New York—p 490
3 *Persistence of Active Lesions and Spirochetes in Tissues of Clinically Inactive or Cured Syphilis A S Warthin Ann Arbor Mich—p 508
4 Hereditary Syphilis in Light of Recent Clinical Studies B S Veeder St Louis—p 522
5 *Case Illustrating Anatomic Seat of Mobile Spasms C L Dana and B Gere New York—p 535
6 Relation of Hypophysis to Certain Clinical Manifestations and Therapeutic Application of Its Extracts J L Miller Chicago—p 549
7 Value of Ambard Quotient in Estimation of Renal Function L Jonas and J H Austin Philadelphia—p 560
8 *Expectorant Action of Ammonium Chlorid W Coleman New York—p 569
9 Study of Proximo Ataxia and Acro Ataxia in Tabes Dorsalis F B Clarke Milwaukee Wis—p 574
10 *Tuberculosis (Concealed) Hitherto Unrecognized Clinical Type G D Head Minneapolis—p 582
11 *Acute Heart Block Occurring as First Sign of Rheumatic Fever P D White Boston—p 589

3 Abstracted in THE JOURNAL June 17 p 2032

5 **Anatomic Seat of Mobile Spasms**—The case of a child who from the age of 6 months to 6 years when he died suffered from continual choreic and tonic spasms involving nearly all the muscles of his body including the neck and face is reported by Dana and Gere. The child was normal until the fourth month then he had an attack of stupor etc, diagnosed as 'meningitis' then development of clonic and tonic movements involving face throat neck trunk arms and legs the legs being mainly rigid so that the child could only imperfectly stand or walk no paralyses, no atrophies no anesthesias, special senses normal intelligence retarded but not seriously. Duration of condition five and one-half years. Death occurred following an operation to resect the posterior spinal roots. The tonic and clonic spasms with some permanent rigidity of the lower extremities were the main features of the case. The tonic spasms caused an apparent spastic paraplegia although there was no real paralysis nor objective evidence of involvement of the pyramidal tracts and both the corticospinal and the peripheral motor neurons showed no or slight signs of degeneration.

The conclusions from this case are that the patient had at the fourth month a low grade infectious polioencephalitis affecting especially the motor cortex and impairing the sensori-motor mechanism that is the dendrites and fibrils. This led not to paralysis but to irregular motor discharges and loss of muscular control. The authors believe that the cortical changes that were found are sufficient to explain the spasmodic symptoms and as these lesions were induced by some infection four months after birth it is a fair inference that they were primary and not secondary factors in the disease. The case presented clinically some of the features of Little's disease with clonic and tonic spasms, but there was no real paralysis and no involvement of the pyramidal or extrapyramidal tracts at all adequate to explain the essential features of the symptoms.

8 **Expectorant Action of Ammonium Chlorid**—It has been denied that ammonium chlorid in the usual therapeutic doses acts as an expectorant on patients suffering from bronchitis. Therefore Coleman decided to reinvestigate its action on the bronchial secretion in man. Patients with acute or chronic bronchitis were selected as subjects for the experiment. The sputum of patients suffering from acute or chronic bronchitis was examined for the ammonia nitrogen content and observations were made on the subjective symptoms referable to the respiratory passages following the administration of ammonium chlorid. The sputum was collected before the administration of the ammonium chlorid was begun and at various times thereafter. The doses of ammonium chlorid varied from one half grain every two hours to 5 grains every two hours. In one case of mild bronchitis of only several days duration treatment began on the second day of the attack with one half grain doses of ammonium chlorid at two-hour intervals. Distinct loosening of the sputum and diminished roughness of the tracheal and bronchial mucous membrane followed. The taste of ammonium chlorid was evident in the sputum at first later the sense of taste for all substances was blunted. Whenever the drug was stopped the sputum became less abundant more tenacious and more difficult to expel and a sensation of dryness or tightness developed in the chest. When the drug was resumed the opposite effects were observed. The action of the drug always developed within one-half to one hour. The experiment was repeated often to eliminate doubt as to the accuracy of the observations. Therefore Coleman is convinced that *ammonium chlorid is an expectorant within the definition of the term*. It probably acts by increasing the water of secretion and softening the mucus.

10 **Tuberculosis, Unrecognized Clinical Type**—The symptoms of nervous and physical exhaustion associated with recognizable tuberculosis have been long recognized and dwelt on by all writers on this subject but that persons showing symptoms of nervous and physical exhaustion (toxic symptoms) and exhibiting no clinical evidence of tuberculosis could still be tuberculous and that the quiescent silent process could serve as the etiologic factor for the symptoms of physical and nervous exhaustion of which they complain Head says has been overlooked.

Head cites the history of the patient whose complaint dates back over a number of years and includes a long series of symptoms of indigestion abdominal pain, backache insomnia constipation fermentative indigestion attacks of mental depression crying spells dizziness aching in the neck head ache and eyeache. Patient stated that she never had a good appetite that the daily routine of her life exhausted her and year after year found her building up from one attack of exhaustion only to relapse into another. She had lived a semi-invalid existence. She had tried to work at various times but always had to give up because she became so tired and exhausted. She had had a slight nervous cough at times but had never coughed sputum. Many consultants had examined her lungs but had found nothing. In the last year the patient had lost 15 pounds in weight. In order to improve her digestion she had dieted to such an extent that she could scarcely eat solid food of any kind.

A careful physical examination of the patient including a searching examination of the lungs revealed no evidence of organic disease. She had occasional rises in temperature to 99.2 pulse 85 to 100. No definite diagnosis could be made. Roentgen-ray examinations of the spinal column and lungs were negative. A tuberculin test was made and the reaction was positive. The clinical diagnosis of neurasthenia was abandoned and the diagnosis made of tuberculosis (concealed) focus not determined with chronic tuberculous toxemia exhibiting symptoms of physical and nervous exhaustion. Head urges that this is a clinical type of tuberculosis

The Failing Heart

Dr Howard S Anders, Philadelphia The failing heart indicates loss of reserve force and is almost invariably curable Heart failure represents the end-result The stability and expectancy of life are dependent not alone on mere ventricular power and vigor but also on a permanence of reserve force A fibrillatory character of ventricular function is probably one of the best danger signals of a failing heart One of the most palpable causes of a heart that is failing functionally is that of intestinal autotoxemia Digestive disturbances with gastric and colonic distention and acidosis are also frequent elements in failing heart

DISCUSSION

Dr James D Heard Pittsburgh The underlying pathologic process in cardiac failure may elude the investigator even after the most careful histologic examination Of the many tests for determining latent heart weakness, we have none that are satisfactory The method of Barringer of estimating functional capacity of the heart through a study of the delayed rise in blood pressure appears to be worthy of further examination The early recognition of alternation of the pulse is of great prognostic value The longest survival of any case recorded in which this condition was found was that of a patient of Tabora who was alive six years after the arrhythmia was demonstrable It is probable that the majority of such patients will not live more than a year after the onset of the alternation

Typhoid and Typhophors

Dr Samuel G Dixon Harrisburg In 1906 there were in Pennsylvania 3 917 deaths from typhoid in 1915 they numbered 1 025 In 1906 there were reported sick of typhoid 24,471, in 1915 the number was 8 048 One source of danger against which no adequate protection has been found is the carrier For one who carries typhoid the name of typhophor is proposed as brief and distinctive The law of 1915 makes possible the exclusion of typhoid carriers from the kitchen and other parts of hotels and restaurants Similar legislation concerning the producer or distributor is desirable The examination of each potential carrier would be a great gain in controlling typhoid The protection of our watersheds from pollution and against possible carriers among construction and repair workers is a question of much importance

DISCUSSION

Dr Alfred Stengel Philadelphia The employment of kaolin in these cases on the chemical principle of absorption offers a beautiful illustration of the introduction of physical chemistry into medicine and surgery the credit of which is due to our bacteriologists Kaolin may also be used for spraying the throats of diphtheria carriers Possibly the value of our use of bismuth and other inert substances in the treatment of gastro-intestinal disturbances may also rest on the principle of absorption

Significance of Hunger Pain

Dr J W Luther Palmerton I am inclined to agree with Einhorn, who states that Moynihan's syndrome may occur with or without ulcer, and favors the theory that hunger pain is caused by a spasm of the pylorus induced by hyperchlorhydria which is often associated with hypersecretion and which is in a large percentage of cases complicated by a justopyloric ulcer When hunger pain and food relief occur with a painful pressure point and occult or microscopic blood in the feces the roentgenologic examination shows gastric hypermobility and a shortened duodenal cap, and possibly also when Einhorn s string test if used is positive a diagnosis of duodenal ulcer may be made, though many authorities claim that even then it cannot be accurate and that a diagnosis of the position of the ulcer by the lateness of the onset of pain is impossible

DISCUSSION

Dr William H Howell, Altoona Hunger pain signifies duodenal ulcer It is not pathognomonic by any means, but helps to confirm suspicions The Roentgen rays and a careful and thorough history of the case are essential to a diagnosis The symptom should never be drawn from the patient, but should be volunteered by him

Dr J B McAlister, Harrisburg As hunger pain is most commonly encountered in cases of duodenal ulcer, it is a most valuable symptom in the diagnosis of that disease Yet pain which closely resembles it is often present when a patient is suffering from other affections Hunger pain is not an accompaniment of any definite chemical state of the stomach As a rule acidity is high, but even low degrees have been found Hunger pain may be a symptom of acid gastritis, and is also found in catarrhal gastritis, it is also present in gastrectoptosis, enteroptosis or nephroptosis In hyperorexia, or parorexia, the sensation of hunger might become so intense as to amount to actual pain Physicians are warned against making a diagnosis of gastric neurosis because a patient happens to be a neurasthenic The patient may present the appearance and symptoms of a neurasthenic and yet harbor a gastric ulcer or carcinoma

Dr J A Lichty, Pittsburgh I agree fully that the etiologic interpretation of this symptom is not clear, and I think that the interpretation Luther gives is probably the correct one There is one point to which I do not believe I could go with Dr Luther and that is that it is due to a hyperchlorhydria Pylorospasm can be caused by other conditions than hyperchlorhydria Mr Moynihan's expression of some ten years ago that hunger pain is duodenal ulcer can certainly not be substantiated

Dr Ernest Laplace Philadelphia I think that by common consent the pain described as hunger pain is usually a contraction of the pylorus Surgically speaking I have almost never failed to find some sort of a lesion around the stomach or even down as far as the rectum when there has been persistent hunger pain

Dr Herbert B Gibby Wilkes-Barre There is no doubt that the most prominent symptom in ulcer is hunger pain but I cannot agree that pains of this character mean only duodenal ulcer It may mean a gastric ulcer

Facts and Fallacies Concerning Electrotherapeutics

Dr W L Clark, Philadelphia Progress in the use of electricity in therapeutics has been retarded by the ancient teaching that electricity is purely psychic in its action by the absence of teaching of the subject in the majority of medical schools and by the prejudice which has arisen on account of the association of electricity with irregular practice I would urge on superenthusiastic electrotherapeutic advocates the necessity of being guarded in their claims and that teaching in electrotherapeutics be established in all medical schools Electricity though always the same force, when modified with knowledge, intelligence and skill may be made to produce different effects, and it is on this principle that the whole superstructure of electrotherapeutics rests The effects produced by electricity may be classified as mechanical chemical, thermic actinic and psychic Some of the future possibilities of electricity in therapeutics are the abstraction of metallic poisons from the body by ionization safe local and general anesthesia with loss of consciousness and relaxation and relief of pain and the production of sleep, thus lessening the need of opiates

DISCUSSION

Dr J Torrance Rugh, Philadelphia The trouble partially lies with the electrotherapeutists themselves To make unguarded statements such as I hear from some of the electrotherapeutists is unwise

Dr G G Davis Philadelphia There is no reason why we should not have a chair of electrical therapeutics in our colleges in the same way that we have the other specialties

Value and Limitation of Radiotherapy in *Gynecology*

Dr Floyd E Keene Philadelphia I analyzed 116 cases Sixty-nine cases were of malignant growths of the vagina cervix or urethra and forty-seven cases of benign hemorrhage of myomatous or myopathic origin The majority of cases received from 85 to 110 mg of radium for twenty-four hours In one case of cauliflower *growth, in a woman* of 28 who was six months pregnant 210 mg were applied with complete cure The only immediate effects were nausea and vomiting which usually ceased from twenty-four to thirty-six hours after removal of the radium In 44 per cent of cases of cancer there was complete healing and in only two cases was there no benefit In not a single instance has there been a failure to check bleeding in the case of benign hemorrhage Mild symptoms of menopause were developed in ten cases In cancer of the fundus operation is preferable to radium this is also true of early cervical cancer In cases of small myoma when the only symptom is hemorrhage, 100 per cent of cures may be expected This work is still on probation

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Medical Sciences, Philadelphia

October CLII No 4

1 Diagnosis and General Treatment of Syphilis J A Fordyce New York —p 469
2 Treatment of Syphilis of Central Nervous System H F Swift New York —p 490
3 *Persistence of Active Lesions and Spirochetes in Tissues of Clinically Inactive or Cured Syphilis A S Warthin Ann Arbor Mich —p 508
4 Hereditary Syphilis in Light of Recent Clinical Studies B S Veeder St Louis —p 522
5 *Case Illustrating Anatomic Seat of Mobile Spasms C L Dana and B Gere New York —p 535
6 Relation of Hypophysis to Certain Clinical Manifestations and Therapeutic Application of Its Extracts J L Miller Chicago —p 549
7 Value of Ambard Quotient in Estimation of Renal Function L Jonas and J H Austin Philadelphia —p 560
8 *Expectorant Action of Ammonium Chlorid W Coleman New York —p 569
9 Study of Proximo Ataxia and Acro Ataxia in Tabes Dorsalis F B Clarke Milwaukee Wis —p 574
10 *Tuberculosis (Concealed) Hitherto Unrecognized Clinical Type G D Head Minneapolis —p 582
11 *Acute Heart Block Occurring as First Sign of Rheumatic Fever P D White Boston —p 589

3 Abstracted in The Journal June 15 p 2032

5 **Anatomic Seat of Mobile Spasms** —The case of a child who from the age of 6 months to 6 years when he died, suffered from continual choreic and tonic spasms, involving nearly all the muscles of his body, including the neck and face, is reported by Dana and Gere The child was normal until the fourth month then he had an attack of stupor etc, diagnosed as meningitis" then development of clonic and tonic movements involving face throat neck, trunk arms and legs, the legs being mainly rigid so that the child could only imperfectly stand or walk no paralyses, no atrophies no anesthesias, special senses normal intelligence retarded but not seriously Duration of condition five and one-half years Death occurred following an operation to resect the posterior spinal roots The tonic and clonic spasms with some permanent rigidity of the lower extremities were the main features of the case The tonic spasms caused an apparent spastic paraplegia although there was no real paralysis, nor objective evidence of involvement of the pyramidal tracts and both the corticospinal and the peripheral motor neurons showed no or slight signs of degeneration

The conclusions from this case are that the patient had at the fourth month a low grade infectious polioencephalitis affecting especially the motor cortex and impairing the sensori-motor mechanism that is the dendrites and fibrils This led not to paralysis but to irregular motor discharges and loss of muscular control The authors believe that the cortical changes that were found are sufficient to explain the spasmodic symptoms and as these lesions were induced by some infection four months after birth it is a fair inference that they were primary and not secondary factors in the disease The case presented clinically some of the features of Little's disease with clonic and tonic spasms but there was no real paralysis and no involvement of the pyramidal or extrapyramidal tracts at all adequate to explain the essential features of the symptoms

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10 **Tuberculosis, Unrecognized Clinical Type** —The symptoms of nervous and physical exhaustion associated with recognizable tuberculosis have been long recognized and dwelt on by all writers on this subject but that persons showing symptoms of nervous and physical exhaustion (toxic symptoms) and exhibiting no clinical evidence of tuberculosis could still be tuberculous and that the quiescent silent process could serve as the etiologic factor for the symptoms of physical and nervous exhaustion of which they complain Head says has been overlooked

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11 **Heart Block as Sign of Rheumatic Fever**—A case is recorded by White in which acute and transient heart block appeared as the first sign of an acute rheumatic fever The conduction time between auricle and ventricle showed great delay before the onset of the joint symptoms and returned to normal about six weeks after the block was discovered In this case the myocardium not only gave the first evidence of the importance of the illness but also showed at least temporary damage while no evidence was found of endocardial or pericardial involvement

American Journal of Obstetrics and Diseases of Women and Children, York, Pa

October LXXIV No 4

12 *Fetal and Placental Syphilis E D Plass Baltimore—p 561
13 Primary Carcinoma of Vulva, Report of Two Cases A Stein, New York—p 577
14 *Correction of Obese and Relaxed Abdominal Wall with Especial Reference to Use of Buried Silver Chain W W Babcock, Philadelphia—p 596
15 Uteroscopic Findings Preliminary Report Collection of Uterine Scrapings A Heineberg, Philadelphia—p 612
16 Examination of Semen with Special Reference to Its Gynecologic Aspects W H Cary Brooklyn—p 615
17 *Wassermann Reaction in Gynecology P F Williams and J A Kolmer Philadelphia—p 638
18 Chronic Focal Infection of Pelvic Organs and Its Relation to Systemic Disease F H Maier Philadelphia—p 652
19 Case of Krukenberg s Tumor of Ovaries C Foulk[illegible]od Philadelphia—p 657
20 Impacted Tumor of Pelvis with Acute Urinary Obstruction Pelvic Pneumococcus Abscess G E Shoemaker, Philadelphia—p 660
21 Relation of Convulsions to Pelvic Disease J L Riggles Washington D C—p 662
22 Acute Lymphatic Leukemia Report of Case T S D Grasty Washington D C—p 669
23 Troubles of Newborn J Epstein New York—p 714

12 **Fetal and Placental Syphilis**—The syphilitic placenta, Plass says, is characterized by increased size and weight, abnormal proliferation of the stroma cells and an obliterative endarteritis and endophlebitis For practical purposes the changes are specific and offer very strong evidence of the presence of fetal syphilis, whereas their absence does not exclude the disease

14 **Correction of Relaxed Abdominal Wall**—An especial advantage claimed for the silver chain by Babcock is the fact that it is adapted for any size of defect and that it may be as quickly introduced as a strand of catgut or silk The terminal link of the chain is tied to the eye of a suitable round-pointed needle by a loop of silk or linen thread, and if the needle has a size equal to that of the chain, the chain slips through the tissues almost as readily as does catgut As it is threaded through the tissues and not merely laid or tacked in place, it is not readily displaced, and has a fixation and support which is especially desirable

17 **Wassermann Reaction in Gynecology**—The Wassermann reactions of 300 gynecologic and obstetric patients were investigated by Williams and Kolmer The percentage of positive reactions (22 6) corresponds closely with the generally accepted incidence of syphilis in adults Of particular interest is the relatively high percentage of positive reactions observed in the following conditions stillbirths 75 per cent , rectal diseases, 50 per cent , amenorrhea, 50 per cent , habitual abortion, 50 per cent , pelvic inflammatory disease 36 per cent , sterility 33 per cent , abortion and miscarriage, 29 per cent , metrorrhagia, 20 per cent , myomas of the uterus, 16 per cent , gonorrheal vaginitis, 10 per cent , pregnancy, 17 per cent The authors urge that the high degree of latent syphilis in women should make a routine Wassermann test in gynecologic and obstetric practice as advisable as any other laboratory procedure

American Journal of Orthopedic Surgery, Boston

October XIV No 10

24 Standardization of Conditions Affecting Posture H L Taylor New York—p 569
25 Fixation of Sacrum *Report of Cases* E H Arnold New Haven Conn—p 574
26 Operative Treatment of Residual Paralysis of Poliomyelitis at Children s Hospital, Buffalo B Bartow and W W Plummer, Buffalo—p 594
27 *Shortening Long Legs and Lengthening Short Legs New Surgical Procedure R T Taylor, Baltimore—p 598
28 Fatal Hemorrhage in Bone Tuberculosis Case Report and Necropsy R C Paterson, Saranac Lake, N Y—p 607

27 **Shortening Long Legs and Lengthening Short Legs**—The operation of shortening proposed by Taylor consists in the removal of the length of bone determined on, the bone ends being mortised with the upper fragment posterior to offset muscle pull and affording closer approximation Bone pegs or dowels are driven in from the front, passing through the entire bone The dowels are made from a tibial graft The second procedure, or that of lengthening the femur, is more difficult, but can be accomplished with little or no postoperative pain from muscle spasm, even when myotomy and tenotomy are not done, but, Taylor says, it is preferable to divide the adductors, iliotibial band and hamstrings freely to facilitate lengthening after the bone is shaped for mortising This operation should be done in two sittings four or five days apart At the first, the tendons and muscles are *cut, and the dowels are made from the tibial crest and kept* in sterile salt solution on ice At the second sitting the incision is made in the thigh and the fibers of the vastus separated to the bone as in the shortening operation With the circular electric saw a linear incision is made in the long axis of the bone on the outer side of the desired length, that is, at least 2 cm longer than it is desired to lengthen the limb

With a thin rounded end or guarded end handsaw, a half section is made on the anterior aspect of bone down to the upper end of the longitudinal incision Similarly, a half section is made on the posterior aspect of the bone up to the *longitudinal incision at the lower end* The *sickle-shaped,* grooved director and retractor acts as a safeguard in these procedures Next a nickel-plated spatula is passed around the bone on the inner side to protect the vessels, while a small electric drill cuts the cortex at intervals through on the inner side of the bone by passing it from the outside longitudinal incision through the medullary cavity to the cortex beyond The nickeled spatula will enable the assistant to see when the inner cortex is punctured With a series of these holes, it is then easy, with a small, thin osteotome, to cause separation of the two halves of the mortise without any splintering or cracking of the bone in an undesired direction

Prior to operation from the knee down the patient has had applied swansdown adhesive traction straps and webbing is supplied and fixed with double perineal straps on a Bradford bed frame on the operation table At the bottom of the Bradford bed frame is a windlass attachment for the reception of the webbing traction straps By means of the key on the windlass the desired degree of traction is made, and with an electric drill holes are now made opposite each other for the dowels in the drawn apart lengthened bone Two dowels are inserted and hold the bone fragments in perfect apposition, while the soft parts are sutured without drainage, and the cast is applied from the toes up to and over the costal margin as a long spica the extension straps having been removed Only one case of lengthening has been done by the author so far, and with no untoward symptoms, showing that the procedure is safe and possible

American Journal of Physiology, Baltimore

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29 *Relation of Acid to Gastric Discharge and Duodenal Regurgitation in Dog W E Morse Chicago—p 439
30 Studies on Bioluminescence Presence of Luciferin in Luminou Bacteria E N Harvey Princeton N J—p 449
31 Id Production of Light by Certain Substances in Presence of Oxidases E N Harvey Princeton, N J—p 454
32 Corpuscles Hemoglobin Content and Specific Gravity of Blood During Hibernation in Woodchuck (Marmota Monax) A T Rasmussen Ithaca N Y—p 464
33 Diastase in Saliva of Ox C C Palmer St Paul Minn—p 483
34 *Conditions of Activity *in Endocrine Glands* Effect of Thyroid Secretion on Pressor Action of Epinephrin R. L Levy Boston—p 492

35 Effects of Epinephrin on Distribution of Blood Volume Changes and Venous Discharge in Limb R G Hoskins, R E L Gunning and E L Berry, Chicago —p 513
36 Effect of Pituitary Extract on Frog s Esophagus. J A Waddell, Charlottesville Va —p 529

29 **Relation of Acid to Motor Function of Stomach** —The relation of gastric acidity to motility, discharge and duodenal regurgitation was investigated by Morse The conditions imposed in this research were first, a normal fasting animal stomach, second, fluid injections of constant temperature and quantity but of varying acidities, third, abolishment of inhibiting sympathetic reflexes by pithing the spinal cord He found that water is discharged from the fasting stomach of anesthetized pithed dogs more rapidly than any percentage of acid The rate of discharge is decreased with increase of acidity Duodenal regurgitation, as evident by increase in the contents of the stomach often occurred at 0 2 per cent acidity and in nearly all trials occurred at or before 0 3 per cent acidity was reached Increase in acidity increases the frequency and amount of regurgitation from the duodenum

34 **Effect of Thyroid Secretion on Action of Epinephrin** — When the thyroid has been previously removed says Levy, cervical sympathetic stimulation or epinephrin injection does not produce an increase in the pressor response to epinephrin It is therefore justifiable to conclude that (*a*) stimulation of the cervical sympathetic or epinephrin injection induces secretory activity in the thyroid, and (*b*) thyroid secretion renders more excitable the sympathetic structures acted on by epinephrin in raising arterial pressure Stimulation of the cervical sympathetic causes the thyroid to secrete promptly, since thyroidectomy immediately after stimulation is followed by a progressive augmentation in pressor response similar to that observed when the glands are left in the animal throughout the course of the experiment Intravenous injection into thyroidectomized cats of a solution of the crystalline, iodin containing compound isolated from the thyroid by Kendall, is followed by an increase in the efficacy of epinephrin as a pressor agent The effect is demonstrable almost immediately after injection and is of relatively shorter duration than in the stimulation experiments This substance causes no appreciable alteration in blood pressure or pulse rate Neither during nor after stimulation of the thyroid through its secretory nerves is there any significant change in blood pressure or pulse rate After thyroid stimulation, even at the time when epinephrin is more effective as a pressor agent there is no increase in the augmentation of pulse rate produced by epinephrin injection This Levy believes indicates a selective action of thyroid secretion in sensitizing sympathetic tissues to the action of epinephrin, since the increase in vascular response is not associated with greater excitability of the augmentors of the heart In cats whose suprarenals have been previously removed, there can be demonstrated, after thyroid stimulation an increase in pressor response similar to that seen in unoperated animals Though there is some evidence in the literature indicating that thyroid secretion acts as a secretory stimulant to the suprarenals the increased effectiveness of epinephrin as a pressor agent after thyroid stimulation is not dependent on a greater amount of circulating epinephrin

Annals of Otology, Rhinology and Laryngology, St Louis

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37 Bacteriology of So Called Coccobacillus Fetidus Ozenae (Perez) with Additional Notes on Treatment of Clinical Ozena by Means of Polyvalent Vaccines Made from Same Organism H Horn and E A Victors San Francisco —p 251
38 Experience with Suspension Laryngoscopy in Over Two Hundred Cases Report of Case J C Beck Chicago —p 330
39 Gram Stain in Making Bacteriologic Diagnosis in Otolaryngology A B Bennett Washington D C —p 375
40 Improved Method for Draining Tympanic Cavity in Purulent Otitis Media J Guttman New York —p 389
41 Sarcoma of Nose Report of Fatal Case with Metastases in Cervical Glands and in Brain J P Clark Boston —p 392
42 Disseminated Myelitis as Complication of Acute Mastoid Infection J R Hunt New York —p 407
43 Bronchoscopic and Esophagoscopic Postulates C Jackson Pittsburgh —p 414
44 Cartilage and Bone in Tonsils W E Grove Milwaukee Wis —p 417
45 Air and Rhinitis W J Wurtz, Buffalo —p 425
46 Intubation U S Bird Tampa Fla —p 434
47 Complications in Tonsil and Adenoid Work with Especial Reference to Chronic Suppurative Otitis Media H M Becker, Sunbury, Pa —p 439
48 Importance of Vestibular Mechanism in Neurology J R Hunt, New York —p 446
49 Role of Eyes in Equilibration and Orientation A Knapp New York —p 453
50 Suggestion Regarding Rinne Test R Sonnenschein, Chicago —p 455
51 Chloroform as General Anesthetic in Nasopharyngeal Surgery W H Nardin Anderson S C —p 463
52 New Mastoid Flap A Dighton Liverpool —p 467
53 Paper Clip in Bronchus Seventeen Years Removed by Superior Bronchoscopy E Beer New York —p 469

Archives of Internal Medicine, Chicago

October XVIII No 4

54 *Renal Function in Pernicious Anemia H A Christian Boston —p 429
55 *Autogenous Defibrinated Blood in Treatment of Bronchial Asthma M H Kahn and H W Emsheimer New York —p 445
56 *Albumin and Globulin Content of Human Blood Serum in Health Syphilis Pneumonia and Certain Other Infections with Bearing of Globulin on Wassermann Reaction A H Rowe Oakland, Calif —p 455
57 *Blood Platelets in Hemophilia G R Minot and R I Lee Boston —p 474
58 *Excretion of Chlorids and Water and Renal Function in Serum Disease F M Rackemann, W T Longcope and J P Peters New York —p 496
59 *Influence of Age and Sex on Hemoglobin C S Williamson Chicago —p 505
60 Autolysis of Nitrogenous Compounds of Blood Serum in General Paralysis and Dementia Praecox H D Singer and W B Quantz Hospital —p 529
61 Ammonium Salts and Abderhalden Test H D Singer and W B Quantz Hospital —p 538
62 *Case of Hematochyluria Observations on Fat Content of Urine and Pathology of Condition D W Carter Jr Boston —p 541
63 *Metabolism Studies in Case of Angioneurotic Edema T G Miller and O H P Pepper Philadelphia —p 551

54 **Renal Function in Pernicious Anemia** —The data given by Christian indicates that in a severe anemia renal function, as measured by dietary tests, is disturbed in much the same way as is found in patients with advanced chronic nephritis, but in only one of these patients was there any evidence in the way of symptoms or physical findings of a renal lesion of the nature of chronic nephritis It seems more probable to Christian that this disturbance in excretion is the result of the anemia either a nutritional or a toxic disturbance in renal cellular activity This view is supported by the improvement in renal function with improvement in blood condition and by the absence of fixation in the case in which anemia was very slight and the excretion picture very different from the other cases Inasmuch as in pernicious anemia the dietary renal test gives a picture similar to that in quite advanced nephritis, Christian states that caution is required in the interpretation of the results of these tests in patients supposed to have nephritis

55 **Autogenous Defibrinated Blood in Treatment of Bronchial Asthma** —Inasmuch as bronchial asthma in the authors' opinion is due to sensitization by a foreign protein, immunization by injection of the causal protein should be of benefit Autogenous defibrinated blood obtained preferably during the attacks of asthma, may serve as antigen for treatment by active immunization Six successive patients with bronchial asthma treated by repeated injections of autogenous defibrinated blood have shown definite improvement as indicated by diminution in frequency and severity of attacks gain in weight increased ability to work and improved subjective symptoms In each case phlebotomy was performed by venepuncture with a sterile needle From 20 to 30 c c of blood were withdrawn and received in a sterile 1-ounce flask containing a number of glass beads The contents were agitated for from five to seven minutes to separate the fibrin The defibrinated blood was then drawn into a 30 c c syringe and immediately injected subcutaneously into the loin of the patient Ten injections at intervals of about one week were made in each case Whenever possible blood was withdrawn during an asthmatic attack but for obvious reasons this was not always feasible There were no local or immediate general effects following the injections

56 **Albumin and Globulin Content of Human Blood Serum**—A series of normal cases examined by Rowe shows that serum albumin varies between 4 6 and 6 7 per cent, that globulin varies between 1 2 and 2 3 per cent, that total proteins vary between 6 5 and 8 2 per cent, that nonproteins vary between 1 1 and 1 3 per cent, while the percentage of globulin in the total protein varies from 16 to 32 per cent The average value for albumin was found to be 5 6 per cent, for globulin 1 9 per cent for total protein 7 5 per cent, for nonprotein 1 24 per cent and for globulin 25 5 per cent In syphilis the globulin is definitely increased, while the total protein remains about normal In pneumonia the globulin is increased more in relation to the total protein than in syphilis while the total protein is reduced due, probably in large measure to a dilution of blood serum by water retention, which occurs in fever In many chronic septic conditions in mild infections and typhoid the total protein is not decreased as it is in pneumonia Globulin seems definitely increased in all infections except in acute tonsillitis typhoid, and in certain mild infections, such as chronic bronchitis The marked dilution of serum which occurs with anasarca is shown in two cases of acute infection associated with acute nephritis which were investigated The evidence presented shows that the Wassermann reaction is not due to a quantitative increase in the serum globulins

57 **Blood Platelets in Hemophilia**—The blood platelets from two typical cases of hemophilia were studied by Minot and Lee They present the theory that the active coagulating principle of the tissue juice is derived in part, if not wholly from the blood platelets As evidence on this point they present the fact that in hemophilia with a normal number of abnormally resistant platelets there is a very abnormal coagulation time but a normal bleeding time In purpura hemorrhagica these conditions are just the opposite The normal number of platelets though few in number are sufficient to form a little thrombin and clot fibrinogen in essentially normal time The value of an excess of platelets seems to be to furnish the active coagulating principle of the tissue juice On one of the hemophilic patients transfusion was performed with 600 c c of normal blood The coagulation time before transfusion was from sixty to 120 minutes After transfusion it was seven minutes A gradual lengthening of the coagulation time occurred for three days when it was again sixty minutes Since about three days is generally assumed to be the length of life of the blood platelet the actual clinical findings seem to corroborate the findings in vitro Minot and Lee conclude that in hemophilia they have an hereditary defect in the blood platelets This defect consists of a slow availability of the platelets for the purposes of coagulation

58 **Excretion of Chlorids and Water and Renal Function in Serum Disease**—Ten cases of serum disease were studied by the authors These studies show very definitely that during serum disease there is often a marked but transient retention of chlorids and of water, associated frequently with slight albuminuria and cylindruria and occasionally with impairment of the excretion of phenolsulphonephthalein In five of the ten cases there was obvious edema with gain in weight In the other cases there was no edema and no gain in weight In the first group it is probable since the plasma chlorids were below normal that some disturbance occurred primarily in the tissues during the intoxication which caused a retention of salt and water in this situation and was associated with a generalized edema There may also have been some functional impairment in the excretory action of the kidneys In the second group in which the plasma chlorids were high the disturbance consisted principally in the impaired elimination of chlorids and the inability to concentrate these organic salts in the urine In the two cases in this group edema was not observed

59 **Influence of Age and Sex on Hemoglobin**—The amount of hemoglobin in the blood of normal persons varies so greatly at different ages that in determining whether a given blood contains more or less hemoglobin than normal, Williamson says it is imperative to consider the age These variations are greatest from birth to 16 years of age Between the ages of 16 and 60 there is a marked difference between the two sexes, this difference growing less after 60 years In view of these facts it is evident that hemoglobinometers should be standardized in absolute terms, most conveniently in grams of hemoglobin per 100 c c of blood Whether or not a given blood contains a greater or less amount of hemoglobin than the normal can be determined only by a comparison of the absolute value obtained by a hemoglobinometer thus standardized

62 **Hematochyluria**—In the case of chyluria reported by Carter the fat content of the urine varied markedly with the fat content of ingested food On a fat-poor diet it averaged 0 35 per cent and on the house diet it rose from 1 to 1 4 per cent With diet containing a daily average of 66 39 gm of fat the average daily output of fat in the urine was 6 45 gm The amount of fat in the urine, however, did not increase in direct proportion to the amount of ingested fat In some cases, Carter says chyle escapes directly into the bladder or ureter through a fistulous opening, in other cases the chyle finds its way into the urine within the kidney In some cases the fluid entering the bladder is true chyle, in others it is lymph

63 **Metabolism Studies of Angioneurotic Edema**—According to Miller and Pepper the attacks of swelling in an individual with an obscure type of angioneurotic edema are associated with a retention of nitrogen, which is greater than appears in intervening periods The excretion of acid bodies is not altered during these attacks A disturbance of the sodium chlorid metabolism is evidenced by a reduced elimination during the three or four days preceding the maximum swelling and by a corresponding excess of excretion afterward The convulsions from which the patient suffers are not associated with a nitrogen balance which is significantly different from that of normal periods and there is no coincident change in the acid ammonia or sodium chlorid excretion A low chlorid intake appears to have a beneficial effect on the attacks of edema, but does not influence the convulsions

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64 Infection Psychoses and Symptom Picture of Mental Confusion A W Hoisholt and W T Harrison Napa—p 392
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66 Septic Teeth J S Marshall U S Army—p 405 To be continued
67 Rocky Mountain Spotted Fever Its Prevalence and Distribution in Modoc and Lassen Counties California F L Kelly Berkeley—p 407
68 Consideration of Rectal and Colonic Disease in Life Insurance Examinations A J Zobel San Francisco—p 410
69 Resume of Epidemiologic Investigations of Epidemics of Poliomyelitis with Reference to Contagiousness J C Geiger and F L Kelly Berkeley—p 413
70 Federal Supervision and Licensure of Clinical Laboratories Under Postal Regulations—Public Health Measure F I Lackenbach San Francisco—p 415

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71 Obligation of State to Growing Child C J Whalen—p 225
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74 Public Health Legislation—Recent and Contemplated C St C Drake Springfield—p 235
75 Health Department Under Commission Form of Government F C Vandervort Bloomington—p 240
76 Classification of Medical Institutions and Its Effects on Medical Education and Medical Profession of America B H Breakstone Chicago—p 243
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78 Importance of Bacillus Carriers in Propagation of Diphtheria G F Ruediger La Salle—p 255
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85 Roentgen Ray Value in Localization of Foreign Bodies in Eyeball H P Wells Chicago —p 274
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87 Two Years Clinical Research on Trachoma Question in Southern Illinois E E Edmondson Mt Vernon —p 283
88 Psychotherapy H W Long, Elmwood —p 286

Journal of Bacteriology, Baltimore

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89 Biologic Variations of Bacteria Induced Variations in Cultural Characters of *Bacillus Coli* M R Smirnow New Haven Conn —p 385
90 *New Culture Medium for Tubercle Bacillus W W Williams and W Burdick Denver —p 411
91 Bacillus Abortus (Bang) as Etiologic Factor in Infectious Abortion in Swine E S Good and W V Smith Lexington Ky —p 415
92 Relation of Protozoa to Certain Groups of Soil Bacteria T L Hills Madison Wis —p 423
93 Study of Boas Oppler Bacillus P G Heinemann and E E Ecker Chicago —p 435
94 Bacteriology of Silage J M Sherman Madison Wis —p 445

90 **Culture Medium for Tubercle Bacillus**—Preparation of the medium used by Williams and Burdick 1 Egg-white solution, dilute egg-white with ten parts of distilled water and shake thoroughly To clear it pass through a thin layer of cotton and then heat to 100 C to hasten precipitation Filter through paper 2 Egg-yolk solution, dilute yolks with ten parts of water and stir well Clarify by adding normal sodium hydroxid Complete solution of the yolk is not desirable The emulsion should be slightly turbid To attain the proper degree of turbidity 1 c c of normal sodium hydroxid is usually added to each 100 c c of the emulsion The solution is heated to 100 C and filtered 3 Meat infusion, 500 gm of finely chopped lean veal are covered with 1 liter of water containing 15 per cent of glycerin allowed to infuse for twenty-four hours and filtered, 5 gm of sodium chlorid are added, and the infusion heated to boiling It is again filtered and then rendered plus 1 per cent alkaline Place *300* c c of the 10 per cent egg-white solution in a liter flask, 300 c c of the 10 per cent egg-yolk solution in another flask, and 400 c c of the meat infusion to which is added 15 gm of powdered agar-agar, in a third flask Sterilize in autoclave at 15 pounds pressure for fifteen minutes While hot 1 c c of a 1 per cent alcoholic solution of gentian violet is added to the broth agar The contents of this flask are now poured into that containing the egg-white and then the egg yolk is added The whole is poured back and forth from this flask to another so as to insure thorough mixing and then it is tubed and slanted The tubes are left in their slanted position for about seventy two hours at room temperature until the contents are well set The cotton plugs are then trimmed and flamed and the tubes sealed with corks This medium presents the same smooth inoculating surface as ordinary agar slants contains as much moisture, is quickly made and is rendered absolutely sterile

Journal of Immunology, Baltimore

August I No 4

95 Studies on Antibacterial Serums Standardization of Antimeningitis Serum A P Hitchens and G H Robinson Glenolden Pa —p 345
96 Id Stable Bacterial Antigen with Special Reference to Meningococci A P Hitchens and G Hansen Glenolden Pa —p 355
97 Elective Localization of Streptococcus from Case of Pulpitis Dental Neuritis and Myositis E C Rosenow Rochester Minn —p 363
98 Phagocytosis of Erythrocytes During Stage of Hyperleukocytosis Following Injection of Typhoid Bacilli T G Miller and O H P Pepper Philadelphia —p 383
99 *Convalescent Typhoid Serum in Treatment of Typhoid A L Garbat New York —p 387
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103 *Relation of Typhoidin Skin Reaction to Immunity in Typhoid Anaphylactic Skin Reactions in Relation to Immunity J A Kolmer and J H Berge Jr Philadelphia —p 409
104 *Relation of Luetin Skin Reaction to Immunity in Syphilis (Including Treponemicidal Action of Human Serum in Syphilis) J A Kolmer and S Broadwell, Jr Philadelphia —p 429
105 *Relation of Diphtherin Skin Reaction to Immunity in Diphtheria J A Kolmer Philadelphia —p 443
106 Antigenic Properties of Tubercle Wax B Lucke Philadelphia —p 457

99 **Convalescent Typhoid Serum**—The serum from convalescent typhoid patients has been employed by Garbat with distinct benefit in three very severe acute typhoid cases

103 **Typhoidin Skin Reaction**—While the bactericidal power of human serums over *Bacillus typhosus* is increased in a proportion of persons following typhoid or active immunization with a vaccine Kolmer and Berge claim that there is no direct relation between the typhoidin skin reaction and the results of bactericidal tests in vitro Agglutinins or complement fixing antibodies or both are present in the blood serum of the majority of persons reacting positively in the skin test and particularly among those actively immunized, but there is no definite relation between these as either may be in evidence in the absence of the other Powdered typhoidin and its control produce severe reactions when injected intracutaneously in doses of 0 0005 to 0 001 mg these reactions and particularly that produced by the control, render the reading and interpretation of the test quite difficult and subject to much error Cutaneous anaphylaxis to typhoidin was found apparently to persist for a longer time among those who have had typhoid than among those actively immunized with the vaccine Among the latter the highest percentage of reactions was found during the first year following immunization While the typhoidin reaction indicates sensitization to typhoid protein there is not yet sufficient evidence to warrant its acceptance as an index of immunity in typhoid

104 **Luetin Skin Reaction**—The anaphylactic luetin test according to Kolmer and Broadwell cannot be regarded as an index of resistance to treponema pallidum, these experiments and the failure of others to produce active immunity in animals to syphilis indicate that a lytic type of immunity is absent in syphilis or, at least, that it plays but a minor role in this infection

105 **Diphtherin Skin Reaction**—The results of this study indicate that hypersensitiveness to diphtheria protein cannot be taken as an index to immunity to diphtheria and that the anaphylactic state bears no constant nor direct relation to the presence or absence of such antibodies as may be detected by experiments in vitro

Military Surgeon, Washington, D C

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107 Naval Aviation Personnel G P Cottle U S Navy —p 353
108 Experiences with Combined Vaccines in Present War with Special References to Tetravaccine Typhoid *Paratyphoid A and B* and Cholera R W Mendelson —p 361
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110 Use of Habit Forming Drugs by Enlisted Men E King U S *Army* —*p 380*
111 Penetrating Gunshot Wounds of Chest W T Fitzsimons —p 385
112 Hospital Train De Luxe P L Jones U S Army —p 389
113 Proposed Motor Ambulance Company M Ashford U S Army —*p 392*
114 Duties of Medical Supply Officers and Their Methods H I Raymond and E P Wolfe U S Army —p 398

New Jersey Medical Society Journal, Orange

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116 Dawn of Better Day for the Tuberculous R C Newton Montclair —p 580

115 Abstracted in The Journal, July 29 p 391

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119 Postoperative Hemorrhage in Hemophiliac Following Enucleation of Eyeball I W Alter *Toledo* —*p 512*

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Southern Medical Journal, Birmingham, Ala

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129 *Syphilis in Its Relation to Public Health L Thompson, Hot Springs Ark—p 879
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131 Symptoms and Surgical Treatment of Certain Conditions Produced by Presence of Adventitious Bands and Membranes Within Abdominal Cavity Report of Ten Cases R B Williams Washington D C—p 895
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136 Nervomuscular Mechanism of Eyes G C Savage Nashville Tenn—p 915
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138 Endoscopy in Ambulatory Clinic A I Weil New Orleans—p 928
139 Dominant Mendelian Inheritance, Principal Factor in Occurrence of Cataract and Ectopia Lentis Report of Cases L H Buxton, Oklahoma City—p 933

126 Abstracted in THE JOURNAL, Dec 11 1915 p 2119

127 **Autogenous Bacterial Vaccines in Treatment of Bronchitis**—The authors experience is based on the preparation of 300 autogenous vaccines for pulmonary infections Of these practically all were administered in part or entirely by other physicians under direction Of these, Robinson and Queen have complete reports on thirty Twenty-two were reported cured after one year Eight were not benefited or suffered relapse Of the forty cases with partial report thirty-six reported an improved condition and four reported no change

129 Abstracted in THE JOURNAL, Dec 11, 1915, p 2118

United States Naval Medical Bulletin, Washington, D C

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140 Studies of Industrial Accidents Which Occurred in Navy Yard at Washington D C W A Bloedorn U S Navy—p 585
141 Intoxication by Detonation and Explosion Gases Aboard Ship K Ohnesorg U S Navy—p 625
142 Flat Foot and Its Measurements M Clements U S Navy—p 634
143 Prevention of Malaria in Field F X Koltes U S Navy—p 640
144 Wassermann Survey on Five Hundred Apprentice Seamen C B Munger U S Navy—p 642
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151 Chronic Lymphatic Leukemia with Acute Exacerbation and Fatal Termination C H Weaver, U S Navy—p 668
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FOREIGN

Titles marked with an asterisk (*) are abstracted below Single case reports and trials of new drugs are usually omitted

British Medical Journal, London

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1 *Radical Abdominal Operation for Carcinoma of Cervix Uteri C Berkeley and V Bonney—p 445
2 Use of Insecticides (Cysticine) Against Lice A Bacot—p 447
3 Fatal Case of Gastro Enteritis Due to Bacillus Aertrycke vel Sui pestifer E J McWeeney—p 451
4 Perchlorid of Mercury Poisoning by Absorption from Vagina A F W Millar—p 453
5 *Case of Puerperal Septicemia Treated by Autogenous Vaccine with Recovery W Grier—p 454
6 New Solid Medium for Isolation of Cholera Vibrio H G Gibson—p 454
7 Value of Hexamine in Aural Suppuration and in Meningitis D Guthrie—p 455

1 **Operation for Carcinoma of Cervix Uteri**—Between April, 1907, and September, 1911, Berkeley and Bonney operated on 100 cases of carcinoma of the cervix uteri by the radical abdominal method The operation consists in the removal of the uterus with its cervix contained in a bag formed of the upper half or two thirds of the vagina closed by a clamp designed for the purpose Together with the uterus and upper portion of the vagina are removed the ovaries, Fallopian tubes, and broad ligaments, the parametric and paravaginal tissue down to the upper surface of the levator ani, and the glands and cellular tissue occupying the obturator fossae and investing the external and internal iliac arteries and veins To effect this wide clearance the ureters are entirely isolated throughout the anterior two thirds of their pelvic course In certain cases part of one ureter has been deliberately resected, and the upper end implanted in the bladder Similarly on occasion a portion of the bladder has been excised in cases in which separation of that viscus from the cervix was impossible by reason of advanced growth In cases in which the glands about the external iliac artery and vein are obviously carcinomatous Berkeley and Bonney extend the dissection up to the bifurcation of the aorta

Twenty died of the operation, 32 died of recurrent growth, 2 died of other diseases, 7 were lost sight of and 39 cured In every case the regional glands removed at the operation were microscopically examined and in 35 were found to be malignant These 35 cases show a much higher operative mortality and a much greater percentage of recurrences than do the 65 cases in which the regional glands were not malignant, but nevertheless a certain proportion of them are cured Nine died of the operation, glands were carcinomatous, 11 glands not carcinomatous, 16 died of recurrent growth, glands carcinomatous, 16 glands not carcinomatous, 1 died of other disease, glands carcinomatous, 1 gland not carcinomatous, 2 were lost sight of, glands carcinomatous 5 glands not carcinomatous, 7 cured, glands carcinomatous and 32 glands not carcinomatous The total carcinomatous glands were 35 and the total glands not carcinomatous were 65 Death from recurrence occurred in 32 cases, as follows 4 cases under a year, 11 between 1 and 1½ years, 5 between 1½ and 2 years, 5 between 2 and 2½ years, 1 between 3 and 3½ years, 5 between 3½ and 4 years, and 1 between 4 and 4½ years Two patients died of disease other than carcinoma The first had pulmonary tuberculosis at the time she was operated on, which proved fatal a year afterward The second died of acute urinary sepsis following an operation to close a vesical fistula a year after the radical extirpation of which it was the sequel Neither of these patients had any sign of recurrent growth

5 **Puerperal Septicemia Treated with Autogenous Vaccine**—The vaccine was prepared from the patient's own blood the culture being a pure growth of a short chained diplostreptococcus Of this 25 million organisms were injected on the sixteenth day of her illness, and on the eighteenth day 50 million Every third day thereafter she was given 50 million until near the end of her illness, when she had 75 million

Journal of Tropical Medicine and Hygiene, London

September 15 XIX No 18

8 Equine and Bovine Streptococci as Causal Agents of Human Infections. A J Chalmers and A Marshall —p 213 To be continued

Lancet, London

September 30 II No 4857

9 *Natural History of Septic Wounds K Goadby —p 585
10 After Care of Persons Suffering from Pulmonary Tuberculosis P C Varrier Jones —p 596
11 Clinical and Radiologic Diagnosis of Intrathoracic Tuberculosis in Children of School Age W Overend and C Riviere —p 598
12 Enucleation of Tonsils W G Howarth —p 600
13 Treatment of Cloth by Antiseptic Substances (Pyxol) in Relation to Wound Infections M Davies —p 603

9 **Natural History of Septic Wounds** —As a result of his investigations Goadby suggests the following routine treatment of septic wounds Polyvalent vaccines should be prepared from strains of organisms isolated from the infected wounds, consisting of (1) streptococci (aerobic and anaerobic varieties), sensitized with antistreptococcal serum, (2) *B proteus,* (3) *B lactis-aerogenes,* and (4) *B coli* A mixed vaccine of sensitized polyvalent streptococcus 5,000,000, with *B proteus* 10 000,000 should be given to all septic cases when admitted pending the bacteriologic report In cases of gas gangrene streptococcal vaccine combined with *B proteus* and *B lactis-aerogenes* should be used in strengths of 10,000,000 each The inoculations as indicated by the bacteriologic examination should be repeated on the third day, and the dose raised to 10,000 000 streptococcus with 20,000 000 of the appropriate bacilli Meanwhile, autogenous vaccine may, if necessary, be prepared for special cases when desirable, otherwise the appropriate polyvalent vaccine may be continued as determined by the bacteriologic indications Goadby emphasizes the fact that methods which are employed to increase physiologic activity must be in logical accord, and that all proper physiologic conditions demanded by the nature of the process must be maintained To omit such elementary principles implies a complete ignorance of the therapeutic use and action of bacterial antigens

Medical Journal of Australia, Sydney

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14 Notes from No 2 Casualty Clearing Station H S Stacy —p 175
15 Transmission of Australian Dengue by Mosquito Stegomyia Fasciata J B Cleland B Bradley and W McDonald —p 179 To be continued

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16 Fibrosis Uteri A N McArthur —p 199
17 Transmission of Australian Dengue by Mosquito Stegomyia Fasciata J B Cleland B Bradley and W McDonald —p 200
18 Case of Carcinoma of Male Breast H Rischbieth —p 205

Sei-I-Kwai Medical Journal, Tokyo

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19 Diabetes Mellitus Among Japanese S Iwai —p 49 To be continued

Bulletin de l'Académie de Médecine, Paris

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20 Deafness from Explosion in Vicinity (Les surdites par obusite) I Ranjard —p 195
21 Slow Interrupters of Advantage in Radioscopy (Il y a interet a se servir des interrupteurs lents en radioscopie) A Zimmern —p 198
22 Historical Sketch of Malaria in France and Need to Enforce Measures Against Mosquitoes (Sur la necessite de donner aux autorites sanitaires en France le droit de rechercher et de detruire les larves de moustiques) R Wurtz and others—p 189

Lyon Chirurgical

July August XIII No 4 pp 537 684

23 **Extraction of Projectiles* (De l extraction primitive des projectiles de guerre) L Sencert and J Le Grand —p 537 (Extractions de corps etrangers au compas de Hirtz dans une ambulance fixe de premiere ligne) B Desplas and D Chevalier —p 565 (Localisation orthoradioscopique des projectiles) J Coste —p 572 (De l extraction de quelques projectiles cerveau etc) Goullioud —p 583, (Traitement des corps etrangers du poumon) L Desgouttes and E Perrin —p 590 (Extraction d une balle mobile dans la plevre gauche apres etablissement d un pneumothorax artificiel) Goullioud and Arcelin —p 612 (Note sur une extraction tardive de projectile dans la *region* du genou) J Rhenter —p 645
24 *Arthrotomy for Shell Wounds of the Knee (Indications et valeur de l arthrotomie dans les plaies du genou par eclat d obus) L Tavernier —p 616
25 *Early Treatment of Wounds of the Knee Without Shattering of Bone (Traitement précoce des plaies du genou, a l'exception des eclatements osseux) J Bosquette —p 633
26 Biologic Research on War Wounds (Les phénomènes de proteolyse dans les plaies de guerre) A Policard —p 647
27 *Research on Early Secondary Suture of Wounds B Desplas —p 660
28 Tardy Tetanus Jullien —p 666
29 *Operative Sterilization, without Antiseptics of Recently Clinically Infected Wounds R Leriche —p 676

23 **Immediate Extraction of Projectiles** —Sencert and Le Grand have become convinced from twenty months of experience in an ambulance at the front that projectiles should be removed without delay in the well equipped ambulances at the front The extraction of the projectiles is the complement of the mechanical clearing out of the wound It is often indispensable and is always useful The only exceptions are very small projectiles buried deep in muscle or bone tissue and not causing any trouble, also projectiles in the brain *that cannot be reached from the wound, and likewise* —at least for the moment—intrapulmonary projectiles All others should be removed at once, they can be extracted then under local anesthesia, as a rule, while general anesthesia is required at a later date They operate with the aid of a roentgenologist, but insist on seeing for themselves the screen picture unless the foreign body is reached at once from the roentgenologist's directions If not, the electric light is turned off and the Roentgen rays turned on for the surgeon to see for himself the foreign body They say that to trust to the directions of another is like a blind man s carrying a paralytic—the combination is not as efficient as one normal man By thus alternating electric light and the Roentgen light they were successful in locating and removing at the first inspection of the wound all the projectiles in 257 cases of grave wounds

23 **Improved Technic for Localization of Projectiles in the Tissues** —Coste extols the advantages of records obtained by Roentgen orthodiascopy from below and also from the side, recording on a sheet of paper the findings with both, centering the shadow cast by the projectile He describes a number of technical points with illustrations and expatiates on the special advantages of this method

23 **Removal of Projectiles in the Lungs** —Desgouttes and Perrin have been surprised at the facility of operative extraction of a projectile in lung tissue causing pain and dyspnea They proceed by preliminary fixation of the lung when it is free, if not, by systematically inducing pneumothorax, their experience having confirmed the harmlessness of pneumothorax when it develops slowly Fifteen typical cases are described in detail with radiographs of some

24 25 **Shell Wounds of Knee** —Tavernier says that the abstentionist theories of the early months had more disastrous effects on shell wounds of the knee than in any other class of wounds Better counsels have prevailed since, and he describes a series of eleven cases in which the knee healed aseptically in eight cases The knee is firm and in good position, the only limitation being more or less inability to bend the knee Only one patient was left with nearly *complete* ankylosis, this was one of the two cases with severe infection The technic followed and the details of the cases are described in full

Bosquette declares that when the bone has not been shattered or the epiphysis extensively fissured early suitable intervention wards off purulent arthritis with its sequels Lesions of the culdesac below the triceps may heal after mere arthrotomy of this culdesac Lesions *of the* interlinear region require arthrotomy in the shape of a capital H This alone permits the adequate toilet of the interlinear region Wounds involving merely the edges of the culdesacs, with or without injury of the bone, require simple gauze wick drainage of the breach in the joint, and secondary arthrotomy only in case of necessity

27 **Secondary Suture of Wounds** —The nine cases of severe wounds here described show that whenever a wound is mechanically thoroughly cleared out, it can be sutured with

confidence It seems to be immaterial for this what method of treatment has been applied The mechanical clearing out is the main thing

29 **Operative Sterilization of Wounds**—Leriche asserts that it is almost invariably possible to arrest suppuration of less than a month's duration by surgical removal of everything pathologic or of lessened vitality, leaving only healthy tissues Some removable local cause can always be found for the suppuration Blue pus disappears under the influence of fifteen minutes of heliotherapy or a little longer application of superheated air

Therapeutische Monatshefte, Berlin

September XXV No 9 pp 409 464

30 *Modern Methods of Treating Syphilis Technic of Different Clinicians (Die moderne Salvarsan Syphilistherapie der Autoren) O Naegeli —p 409 To be continued
31 *Amaurosis Following Administration of Optochin Three Cases (Drei Falle von Optochinamaurose) A Adler —p 420
32 Advantages of Desiccated Potato in the Diet of the Sick (Ueber die Verwendung der Trockenkartoffel zur menschlichen Nahrung) Hochhaus —p 424
33 *Case of Chronic Trional Poisoning (Fall von chronischer Trional vergiftung) C von Noorden —p 426
34 Experiences with Substitute for Cod Liver Oil Riehn —p 429
35 *Yeast in Infant Feeding (Zur praktischen Verwendbarkeit der Hefe im fruhesten Kindesalter) Riehn —p 429*
36 *Significance and Treatment of Infants Vomiting (Beitrage zur Bedeutung und Behandlung des Erbrechens im fruhen Kindes alter) H Nothmann —p 435

30 **Modern Treatment of Syphilis**—This long article by Naegeli analyzes the literature on the treatment of syphilis with salvarsan, bringing it down to 1913 in this instalment, comparing the technic and results of the different writers Naegeli has been the assistant of Professor Jadassohn at Bern, and states that Jadassohn's method of treating children with inherited syphilis has proved very satisfactory This is the intravenous injection of 0 005 gm salvarsan per kilogram of body weight once a week He has lately been using neosalvarsan in a concentrated solution, this permits a larger dose for older children than is possible with salvarsan The drugs can be injected into a muscle computing the dose from the body weight and proportional to the adult dose He has had good experiences with wrapping infants in mercurialized gauze They are given mercuric chlorid at the same time and the older children get calomel injected into a muscle All the dosage is regulated by the Wassermann reaction Baginski thinks that intravenous treatment is too dangerous in children He had good results from intramuscular injections in 115 cases He ascribes the same importance to the Wassermann reaction in children as in adults, no more and no less Attempts to give the salvarsan to infants in the milk of the mother or of goats were soon abandoned mainly on account of the uncertainty of the dosage The same fate befell Meirowski's method of treating with serum from horses treated with salvarsan A vein in the head or neck was occasionally utilized for the intravenous injection in some infants

31 **Optochin Amaurosis**—Adler warns that even the therapeutic dose of optochin is liable to seriously impair vision In the first of the three cases he reports the amaurosis lasted for twelve hours but then subsided, leaving permanent severe changes in the retina In the second case the impairment of vision kept up for several months and vision is not completely normal even nearly a year later The drug was suspended at the first signs of trouble but the condition grew worse to complete amaurosis the following day These patients were young women In the third case the patient was a child under 2 and the amaurosis was complete and persisted for a week after suspension of the optochin In the seven cases on record in which the ophthalmoscopic findings are reported, the findings were closely similar to those in Adler's three cases They suggest that the amaurosis is a quinin amaurosis With the latter drug however, it develops only when large doses are given, while relatively small doses of the optochin have sufficed to bring it on, in one case only two 0.25 gm doses The visual disturbances occur in a far larger proportion of the patients using optochin than with quinin In conclusion he states that he will not feel justified henceforth in using or in recommending optochin until further study of the subject It may be possible to obtain equally good results with smaller doses or to eliminate from the drug the special constituent which acts on the apparatus of vision

33 **Chronic Trional Poisoning**—Von Noorden's patient was a woman of 68 who for twenty years had been taking from 0 75 to 1 gm trional about twenty times a month, on retiring An alarming syndrome developed finally, the main features of which were weak heart action, anemia and polyneuritis, following a month of general malaise and weakness The absence of skin disturbances may have been due to the fact that the patient kept quietly indoors and that heavy curtains prevented the ingress of light—the presence of hematoporphyrin in the blood is a powerful sensitizer to injury from sunlight In cases of this kind there are usually associated methemoglobinuria and nephritis which this indoors-keeping elderly woman escaped, although the urine was cherry red for a time

36 **Vomiting in Young Children**—Nothmann is inclined to explain the vomiting with which any and every infectious disease begins in many children as a manifestation of an actual stomach disturbance—the first local phenomenon from the invading infection The vomit may contain particles of food which under normal conditions would long since have been digested and passed along Or the vomit may contain mucus In certain cases the vomiting seems to be the effect on the vomiting center of the fever or of infectious products In some infants he has found swollen mesenteric glands responsible for local tenderness and vomiting The abdomen otherwise seems normal, and the glands generally subside to normal size in a day or two The lymphoid organs in the abdomen may swell, the same as the lymphoid organs in the throat, with oncoming or installed infection, especially in children with the exudative diathesis

He warns further that a cough even a mild cough may start a susceptible child to vomiting, and thus mislead the physician to assume stomach trouble when the main cause is in the respiratory passages Here the tendency to vomit can be arrested by reducing the irritation in the throat eliciting the vomiting reflex, a little of some anesthetic will accomplish this Some children vomit as the sole symptom of an infectious process in the nasopharynx It would escape attention if it were not for the child's being brought to the physician on account of the vomiting Children in this group are generally of a neuropathic tendency, inclined to urticaria and other vasomotor disturbances with the facialis phenomenon Every new "cold" starts the vomiting anew Treatment is simple and effectual The food should be given cooler than usual solid food should be finely chopped and the diet should be more of a fluid form In severe cases the throat will have to be anesthetized with codein or the like even although the throat may not be inflamed In the hypersensitive neuropathic condition of these children the mere passage of food through the throat elicits the vomiting reflex Nothmann has witnessed cases of so-called nervous vomiting develop in connection with vomiting from this cause—a pathologic conditional vomiting reflex thus having been evolved It is sometimes finely differentiated Some children vomit only at the meal and at the same food as at the time of the primary vomiting Children who vomit only after one certain meal or one special dish usually belong in this category and treatment should be by suppressing for a time the cause which brings on the conditional reflex In many cases one or two weeks of complete change of the taste and composition of the meal in question will break up the tendency to vomit

Vomiting may also appear as a symptom of disease in the nasopharynx not accompanied by cough The vomit contains masses of secretions from the diseased nose or throat, the children vomiting when the secretions swallowed reach a certain bulk By feeding chilled food in spoonfuls the tendency to vomit may be held in check and the children not be further debilitated by loss of their nourishment If nothing else helps, lavage of the stomach will ward off vomiting for hours and days thereafter This permits the children to retain their needed food He rinses out the infant's stomach with warm Carlsbad or Ems water and waits for fifteen minutes before giving the food He adds that lavage of the infant stomach is so simple when done by a practiced hand and the benefit therefrom is so great in these cases that he commends it warmly, to be repeated at need

Gazzetta degli Ospedali e delle Cliniche, Milan

September 10 XXXVII No 73 pp 1137 1152

37 *Lavage and Local Medication of Spinal Canal in Traumatic Meningitis (Il lavaggio e l antisepsi del canale rachideo in un caso di meningite traumatica) P Costantini —p 1143

September 14 No 74 pp 1153 1168

38 Necessity for Excluding Tuberculosis Suspects from the Active Army (Gravi problemi nel giudizio di abilita al servizio militare) E Villa —p 1167

September 17 No 75 pp 1169 1184

39 *Prophylaxis of Abdominal Ptosis (La profilassi delle enteroptosi occulte) S Salaghi —p 1172

37 **Local Medication in Traumatic Meningitis**—A young man developed severe meningitis four days after a bicyle accident with probable fracture of the base of the skull Lumbar puncture showed the cerebrospinal fluid under high pressure and turbid After withdrawal of 100 c c, 5 c c of an isotonic solution of a colloidal silver preparation was injected into the spinal canal Improvement was evident at once and a complete cure followed in less than three weeks from the first signs of trouble He repeated this local medication daily for five for three and for two days with intermissions of three days The course was concluded with four daily injections of 3 c c of a 3 per cent solution of phenol instead of the silver salt He did not hesitate to withdraw from 80 to 100 c c of the fluid The head was lowered below the rest of the body as soon as the drug was injected The cerebrospinal fluid showed signs of acute inflammation but bacteriologic tests were constantly negative In Costantini's eighteen other cases of meningitis, meningococci were always found

39 **Prophylaxis of Enteroptosis**—Salaghi remarks that he has found downward displacement of viscera in many patients presenting no outward signs of this tendency to abdominal ptosis The abdomen does not noticeably protrude and does not sag but it is large and prominent and in a certain number of cases there is digestive disturbance These digestive disturbances increase and become more common as the ptosis increases and a vicious circle is soon set up, leading to pronounced enteroptosis in time with its train of symptoms The disturbances are generally ascribed to indigestion but they are mitigated by reclining Supporting the abdomen also gives relief This is tested with one hand raising the abdomen, the other hand on the back As loss of fat is an important factor in the etiology of enteroptosis it is important to combat this, and while waiting for the abdominal walls to regain their adipose tissue and the walls of the viscera and the sustaining ligaments to regain their tonicity, it is important to restore the viscera to place and hold them there by some supporting band device He warns physicians that they may be indirectly responsible for the development of enteroptosis in the predisposed, by needlessly reducing the diet in case of slight and transient digestive disturbance It seems incredible," Salaghi remarks in conclusion, "that physicians can be incriminated in the development of a congenital anomaly but this too often is the case The anomaly is compensated for naturally but the unstable balance is easily upset and the physician's orders—possibly too strictly followed—may bring the upset"

Policlinico, Rome

September 17 XXIII No 38 pp 1119 1142

40 Typhoid and Paratyphoid in the Vaccinated (Osservazioni *intorno* alla vaccinazione antitifica) I Ravenna and A Azzolini —p 1119

41 Treatment of the Wounded at Rome Hospital (I *feriti curati* nell ospedale di riserva al Policlinico nel reparto del prof R Alessandri dall agosto 1915 all aprile *1916*) V Grossi —p 1126 Commenced in No 36 p 1076

42 The War Has Saved France from Ravages of Alcoholism (La guerra ha salvato la Francia dalle stragi dell alcoolismo) L Luzzatti —p 1133

Brazil-Medico, Rio de Janeiro

September 2, XXX No 36 pp 281 288

43 *The Prognosis of Tabes O Clark —p 281 Commenced in No 35, p 273

44 *Sodium Iodid from the Pharmacal Standpoint (Pharmacia chimica do iodeto de sodio) A A da Matta —p 282

43 **The Prognosis in Tabes**—Clark remarks that the more clinical experience one has, the more at a loss one feels when called on to state the outlook in a case of tabes In a comparatively brief period he had some cases in which the course was most surprising, some with exceedingly severe symptoms rapidly progressed to a clinical cure, while certain very mild cases developed almost a fulminating course under the usual treatment In three recent cases, without a trace of ataxia, each of the patients presented the Argyll Robertson and Westphal signs but one had cerebral, another bladder disturbances and the third complete amaurosis in six months Another patient with the complete manifold syndrome of tabes in the stage of ataxia was carried to his bed in the hospital in 1914 but improved remarkably under two doses of neosalvarsan, 0 3 gm at a month's interval and eleven doses of 50 c c of a 10 per cent solution of sodium iodid, all in two months, with two additional doses a month later The man recovered his full earning capacity and has maintained it to date, and the Argyll Robertson sign and lightning pains have long disappeared At the same time another patient, with mild oligosymptomatic tabes, in the pre-ataxia stage, was given a month's course of intravenous injections of mercury cyanid on alternate days The condition grew rapidly worse and the man had to be carried when he left the hospital when treatment was suspended Clark calls attention to the occasional aggravation of the visceral pains after an injection of neosalvarsan preceded by a purge In some cases vision was materially impaired for a few days after a dose of neosalvarsan, but this soon righted itself Some patients found that vision was improved after it He regards the drug treatment of tabes as particularly promising for those who watch over their symptoms very closely The tonic effect raises their spirits and the general condition improves even though the tabes proper is not modified

44 **Sodium Iodid**—Da Matta discusses this drug at first from the pharmacist's point of view, means to detect adulteration, etc He advocates its administration to generate nascent iodin in chronic ear and throat disease, and by intravenous injection to stimulate vital functioning and repair For local treatment he uses equal amounts of a concentrated solution of sodium iodid and a solution of hydrogen dioxid of twelve volumes For the ear, he instils 5 drops of the 3/10 sodium iodid solution and follows at once with 5 drops of the other solution For the nose and throat, the two fluids are applied alternately in the form of spray or the patient gargles first with one and then at once with the other, alternately He has found this local treatment effectual both in prophylaxis and treatment For intravenous injection he uses a 10 per cent solution gradually increasing the dosage from 1 gm upward The usual limit is 20 gm His clinical experience with it has been very favorable, especially for tuberculous glands and tropical buboes, in heart disease, tendency to angina pectoris and arteriosclerosis in general, as the drug dilates the blood vessels and thus reduces the arterial tension He adds that it facilitates secretion in the bronchi, and is useful as an adjuvant in "scrofula," in *rebellious internal* syphilis gout and asthma and in rheumatism of all kinds Associated with the salicylates he has found it *particularly* valuable in acute rheumatism

Siglo Medico, Madrid

August 26 LXIII No 3272 pp 545 560

45 *Seven Families with Peptic Ulcer in Two or More Members (Ulcera peptica familiar) L Urrutia —p 546

46 Ethical and Vicious Medical Periodicals (La buena y la mala prensa) C Juarros —p 551

September 2 No 3273 pp 561 576

46 Common Scalp Diseases Causing Loss of Hair (Seborrea de la cabeza —Alopecia pitiriasica) E de Oyarzabal —p 562

45 **Familial Peptic Ulcer**—Urrutia cites some instances on record in which two or three members of a family had

developed gastric or duodenal ulcer He has encountered seven families with a history of this kind, operative treatment being required for gastric or duodenal ulcer in two or three of the adult brothers or sisters Habits of life and diet *cannot be incriminated for the peptic ulcers, as some of the* families were widely scattered One man lived in Cuba and his sister in Spain In one family, one brother lived in the Philippines, a sister in Spain and a cousin in another country All began to suffer from the stomach as they reached the age of 18 In another family the influence of alcohol might have been a factor in the two brothers but not in the sister The "status lymphaticus," "asthenia universalis" as predisposing to peptic ulcer and a general tendency to hypoplasia are all manifestations of physical inferiority, and all have the common feature of predominant mononucleosis The different members in the families cited sometimes presented different types of this substandard constitution

Grèce Médicale, Athens

May 1 15 XVIII No 9 10 pp 17 20

47 *Prophylaxis of Tuberculosis (Moyens de prophylaxie contre la tuberculose) E Zemboulis —p 17

47 Prophylaxis of Tuberculosis —Zemboulis' article forms the contents of a little pamphlet designed for free distribution by the public health authorities at Constantinople The prefect of Constantinople has recently had walls placarded with instructions how to combat flies and various measures for individual prophylaxis of tuberculosis They are in simple language and in the speech of the people Zemboulis' pamphlet is officially addressed to the public of Constantinople by the National Medical Association of the Turkish Empire

Russkiy Vrach, Petrograd

XV No 32 pp 745 768

48 Surgical Treatment of War Wounds of Peripheral Nerves (Khirurgicheskoe liechenie ognestrielnikh ranenii perifericheskikh nervui) A M Grinstein and E S Gurvich —p 750

49 Indications for Suturing Nerves (O pokazanikh k sshivaniu nervui) A G Naumann —p 758

50 Alleged New Species of Prowazekia (Prowazekia Ninui Kol Yakimovoe) V L Yakimoff —p *760*

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

September 16 II No 12 pp 989 1084

51 Degenerative Psychoses (Bijdrage tot de kennis der degeneratie psychose) W F Theunissen —p 989

52 *Operative Treatment of High Myopia L H van Romunde —p 1011

53 *The Electrovibrator as Guide in Extraction of Metal Foreign* Bodies (De electro vibrator als onmisbare gids bij de verwijdering van projectielstukken) N Voorhoeve —p 1018

54 *Poisoning of the Hands from Wild Parsnip (Een reeks gevallen van dermatitis veroorzaakt door de pastinaak—Pastinacea sativa) K Edel—p 1024

52 Operative Treatment of High Myopia —Van Romunde reports his experience with eighteen operative cases of myopia He operated a total of 137 times in all on these patients, thus averaging seven or eight operations on the eye The full details of each case are tabulated for comparison *The list* includes two cases in which detachment of the retina occurred but not in connection with the operative measures as there was an interval of two and five years between The cases show that while an operation for myopia is always a serious intervention, yet vision was improved materially thereby Even if progressive myopia is only arrested, this in itself is a great gain The difference in refraction before and after the intervention in his cases amounted to about 20 or 21 D The Fukala technic was applied in all The eighteen patients were between 10 and 23 One young man had discission of the lens done fourteen times, with paracentesis of the cornea once, all with no complications Choroiditis was found in one case on reexamination two years later In another patient severe secondary glaucoma developed after the third discission, compelling linear extraction under general anesthesia, with sclerotomy As to the operation increasing the chance for detachment of the retina, he thinks that the Fukala technic exposes less to this than the Hess-Sattler About 4 1 per cent of persons with myopia above 10 D between the ages of 10 and 30 develop detachment of the retina without operative intervention This percentage is much higher for persons with myopia of 20 D which brings the proportion of nonoperative cases in which detachment of the retina occurs to about the same figure as *in the operative cases, and, naturally,* operative *treatment* is restricted to the severer forms of myopia

54 Dermatitis from Wild Parsnip —The men had been cutting weeds in a field and the next day their hands were red and inflamed, with blisters The juice of the wild parsnip was found responsible for the dermatitis It subsided in a few days but some of the blisters became infected in some of the men, prolonging the trouble Edel induced the same dermatitis on a small scale on his own hand with some of the plant juice

Hospitalstidende, Copenhagen

September 13 LIX No 37, pp 893 912

55 Radium Treatment of Lupus Vulgaris P Haslund —p 893

Ugeskrift for Læger, Copenhagen

September 7 LXXVIII No 36 pp 1527 1570

56 *Treatment of Chorea with Magnesium Sulphate. K Schroeder —p 1527

57 *Neuritis from Incorrect Technic for Injection of Salvarsan (Bemærkning til den intramuskulære Salvarsaninjektions Teknik) A Kissmeyer —p 1544

56 Magnesium Sulphate in Treatment of Chorea —Schroeder gives the details of nine cases of chorea minor in children and two cases in adults, rebellious to all other measures tried but yielding to subcutaneous injections of a 20 per cent solution (by volume) of magnesium sulphate ($MgSO_4$) in small, slowly increased doses, from 0 2 gm to 3 gm a day or, in the very severe cases, up to 8 gm a day The results were so good that he thinks hospitals might be justified in giving this method of treatment a trial, keeping the patients under surveillance The improvement under the dosage given and the return of symptoms when the drug was tentatively suspended confirmed its therapeutic possibilities When Schroeder began this treatment he had no knowledge of others having applied it, but he later found records of its having been used by Calcaterra, Marinesco, Caronia and Grober, but all injected the drug by the intravenous or intraspinal technic The subcutaneous route does not seem to have been used In Schroeder's cases the chorea was of two or three months' standing in most of the patients The range was from two weeks to three years

57 Technic for Intramuscular Injection of Drugs —Kissmeyer has encountered some cases of neuritis of the sciatic nerve developing consecutive to intramuscular injection of salvarsan, and he here discusses ways and means to avoid such a complication He says that the accessible textbooks do not specify the technic in all its details He advises to have the patient stand, bending forward a little, *supporting* himself against a table or the back of a chair, bending slightly toward the side where the injection is to be made to relax the muscles On the reclining patient it is difficult to find the right place, as the anatomic conditions are some *what altered The physician sits on a high stool,* back of the patient, and marks the crest of the ilium and a line two fingerbreadths below the highest point of the crest Another line is marked two fingerbreadths behind the trochanter Where these lines intersect is the best point to insert the needle to avoid nerves and vessels The cannula is pushed in very slowly, supporting the hands by the ulnar margin against the patient The tip of the cannula should point toward the middle and downward When the cannula is in place, the patient is asked whether he feels any pain, especially pain radiating into the legs If he does, the tip of the cannula is *drawn partly out and turned to point* it a little more toward the side If the tip hits against bone, it should be withdrawn a trifle After waiting a little to be sure that no blood drips from the cannula, the injection of the drug proceeds The injection itself does not cause much pain if amounts not too large are used His usual dose is 0 4 or 0 5 gm salvarsan in 3 5 c c oil The pain that follows may be soothed with a little sedative and seldom is felt longer than for one day

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THE DUTY OF THE MEDICAL PROFESSION TOWARD THE COUNCIL ON PHARMACY AND CHEMISTRY*

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NEW YORK

The work of the Council on Pharmacy and Chemistry has been the subject of so many able discussions that I shall not attempt to do more than recall to your minds some of the main features of this work and offer suggestions for giving effect to it

Sollmann has written of "The Broader Aims of the Council," setting forth the ultimate objects for which the Council is striving, and about a year ago a committee of the Board of Trustees submitted a special report to the House of Delegates in which the conditions that had made the organization of the Council necessary were reviewed In that report attention was called to the failure of the medical profession to support this work properly, and a resolution was offered endorsing the work of the Council and pledging the best efforts of the members of the House of Delegates in furthering it

The widest publicity has been given to Sollmann's articles and to the report of this committee, and few who have the interests of therapeutics at heart can be ignorant of them, but the majority of teachers in medical schools are not well informed concerning the problems that confront the Council and the part they should take in the movement which has for its ultimate purpose the placing of therapeutics on a rational basis My present remarks, therefore, will be addressed largely to those who have failed to lend active support to this movement

Therapeutics was in a condition termed chaotic at the time that the Council was formed about eleven years ago, and though there has been a great improvement, this is incomparably less than it would have been if teachers in medical schools had taken a more serious interest in its work

The early efforts of the Council were devoted largely to disproving the misleading claims made by the exploiters of nostrums that were advertised to physicians, but despite the exposures that were made, the exploitation continues in the most brazen fashion without any pretense that the Council's reports were inaccurate

It would seem almost self-evident that the exposure of the fraudulent nature of a preparation would result in its disappearance from the advertising pages of reputable medical journals, but a perusal of the advertising pages of many of the leading medical journals will show that there has been little change as the result of the exposures by the Council, and useless, dangerous and fraudulent preparations are still advertised as before

"The burnt child dreads fire," and it would seem that physicians who had learned of the deceptions that had been perpetrated on them would be more cautious about accepting the statements of interested nostrum venders, but I do not believe that many of you are aware of the frequency with which even the leaders of medical thought allow themselves to be used in the exploitation of nostrums no better than those that have been shown to be fraudulent

A careful review of the literature of many proprietary preparations will show that this consists largely of verbatim quotations from papers read by eminent clinicians When one comes to examine the original papers from which these quotations are taken, he finds the statements exactly as quoted, but without evidence to support them, and if he seeks further he will find that the statements are practically repetitions of older claims made in the advertising literature of the nostrums In other words, the clinician quotes the advertising circular, without crediting it, and the nostrum maker quotes the clinician and quotes him as the authority for the words that he had put into his mouth And this then passes for medical literature, to our shame

Horatio Wood[1] says of one who gives no evidence in support of his statement that he goes on the common principle of the nostrum vender that any assertion made with sufficient dogmatism will be accepted by the medical profession

This is a severe indictment of those who claim to be members of a learned profession, but if any one is disposed to doubt the correctness of the indictment he may dispel his doubts by analyzing many of the statements made in the advertisements of the nostrums appearing in the medical journals

A similar indictment is made in different words in the report of the committee of the Board of Trustees to which I have referred, and to which I shall refer again In this report it is stated that the physician is often made an unconscious dupe and accessory to the exploiter

These and similar charges have been made against physicians so frequently that they no longer produce a blush, they are hardly noticed, and are forgotten almost as soon as uttered, but it must be obvious that those who make such charges are slanderers or that there are many physicians who are totally unfit to practice medicine but who continue in good standing in medical societies.

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* Chairman's address read before the Section on Pharmacology and Therapeutics at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

[1] Wood H C Pharmacologic Superstitions The Journal A M A April 8 1916 p 1067

Let us consider for a moment just what this means. Quoting again from this report: "The country doctor (and it might be said with equal truth in essentials of many of the leaders of medical thought of this very hour) no longer took with him in his saddle-bags a few reliable drugs with whose actions and limitations he was familiar, but ready-made mixtures about the composition of which he knew little and about the therapeutic actions of which he knew less, for all he knew was what was told him by the manufacturer, who was in most cases a layman, without knowledge of medicine, pharmacy or chemistry." That is exactly what is done (except for the saddle-bags) by thousands of physicians today.

Several years ago many teachers in medical schools received circulars describing in glowing terms the value of certain mining stocks written by one who pretended to give advice based on expert knowledge. It was shown subsequently that his only knowledge of the subject had been obtained from the owners and promoters of the mining stock, and the writer of these glowing circulars was sent to the penitentiary, where he spent about a year, probably thinking over the unwisdom of giving expert advice to investors without having first acquired expert knowledge. I trust the analogy is obvious.

I have endeavored to speak plainly in order that every one may realize the necessity of our correcting these conditions that are so little to the credit of the medical profession, and since it is obvious that the mere exposure of deception is alone insufficient to deter physicians from using the nostrums so exposed, we must seek further for the means of instituting a rational system of therapeutics, and ways whereby each of us may contribute his part toward correcting existing abuses.

It is plain that a rational system of therapeutics must rest on an adequate knowledge of the pharmacologic and therapeutic actions of the agents employed, and since it is wholly impossible to know the actions of any considerable number of drugs, it becomes equally plain that the first step consists in selecting a few drugs of real value and extending our knowledge of them.

The Council has published a list of drugs that are deemed essential in the treatment of the sick under the title of "A Handbook of Useful Drugs." This list is far from perfect, but it will serve as a starting point, and with the extension of our knowledge it will be improved by such additions and deletions as may be found necessary.

Every teacher of pharmacology and therapeutics can render a distinct service to medicine by cooperating with the Council in improving this list. An examination of any textbook of pharmacology or therapeutics will show how fragmentary our knowledge is concerning even those drugs which are in common use and which have been studied extensively. We know little of such fundamentally important questions as the absorption and elimination of quinin, morphin, strychnin and the digitalis bodies. We are in total want of agreement concerning even the doses of many of our most frequently used drugs, and we have almost no knowledge of the differences in activity of various drugs by different modes of administration, and one is astounded at times by our reckless use of potent drugs.

If our knowledge of such fundamental character is so imperfect concerning our more important drugs, imagine how profound is our ignorance of the less frequently used agents and of the secret nostrums.

There is a strong tendency in many quarters to manifest impatience with those who employ their time in investigations of such purely practical questions as these, and brilliant reputations are not built on the results of such prosaic work. But pharmacologists cannot render the service to medicine that therapeutics rightly demands of them unless they devote at least a portion of their time to the solution of these problems, and the want of a rational system of therapeutics will continue to serve as a source of reproach to pharmacologists and clinicians until more earnest efforts are made to supply the knowledge now needed so urgently.

I have framed a severe indictment against therapeutics, as many others have done before me, but while we have hitherto contended that the clinician had only to turn to well known drugs in place of the nostrums shown to be fraudulent, we have found that the appeal has fallen for the most part on deaf ears, and on looking further into the matter we see a reason—there are no well known drugs to which we can turn.

Many will protest that morphin, quinin, atropin and digitalis are well known. To this I can only answer that they have long been known, and that they have certain well recognized actions, but that they are well known, I deny, though I will say freely that our knowledge of them relative to that of the nostrums almost entitles them to be classed as well known.

Pharmacologists have not always clarified the subjects that they have investigated. They have often misled clinicians into believing that the results obtained through the experimental use of enormous doses of drugs in the laboratory were analogous to those that would be secured by the use of therapeutic doses. Thus pharmacologists found that the perfusion of concentrated solutions of digitoxin through vessels induced active constriction of those vessels, and clinicians became convinced that digitalis and digitoxin were contraindicated in those conditions in which a high rise of blood pressure might prove dangerous, and that strophanthus should be used in such cases because of its far slighter tendency to cause vasoconstriction.

Clinicians were thus led to employ strophanthus, which is absorbed so irregularly as to be a most dangerous drug for oral administration, in many cases in which digitalis would have proved a means of averting death.

It is not my purpose to create a spirit of antagonism between pharmacologists and clinicians. One might as well foment mutiny on board ship during a storm. I do desire earnestly to learn how we may best cooperate to stop abuses that threaten the welfare of medicine.

I believe that I have pointed out a way whereby pharmacologists and clinicians can cooperate with the Council most effectively, and just here I wish to utter a word of warning lest my remarks on this score be misunderstood. I would not have any one suppose that all who would cooperate with the council are expected to agree that its findings are always correct. Nothing could be further from my thoughts, for the Council can have no truer friend than he who in good faith points out its errors and assists it to come to correct decisions, for its influence for good must increase with the reliability of its decisions.

But it is not to the pharmacologists and the clinicians alone that I would appeal for cooperation, for there is no greater fallacy than that of supposing that the desired reforms can be brought about rapidly without the cooperation of teachers in the various branches of medicine. Those who wish to cooperate will find suggestions for their guidance in a series of letters that were prepared some time ago by the Council's Committee on Medical Education, but I would lay especial stress on the fact that effective cooperation requires an understanding of the problems involved.

While the details demand careful study, the broad principles to be followed are plain. The physician must learn to coordinate his knowledge of physiology and pathology better for the diagnosis of disease, he must base his therapeutic use of drugs on a more accurate knowledge of their pharmacologic actions, he must know more of the possibilities and limitations of their therapeutic applications, he must learn the art of prescribing, and especially should he observe simplicity in the prescribing of drugs, he must learn something of the recent history of therapeutics in order that he may avoid its pitfalls and the way that lies back into therapeutic chaos, he must learn that independent research offers the only means for therapeutic progress, that accuracy of clinical observation must take the place of vague impressions, that clear and concise descriptions of the therapeutic actions of drugs must replace meaningless statements, such as "the medicine seemed to do good", that no statement regarding the actions of a drug should be accepted without analysis of the evidence on which it is based, and that statements without supporting evidence are wholly valueless, no matter how eminent their author may be, above all, every physician must bear in mind that when he undertakes to advise his patients concerning the use of a drug without having first acquired the knowledge on which alone such advice can be given honestly, he is perilously near to the commission of a fraud.

Then, and not until then, will therapeutics be established on a rational basis, even though our knowledge is still fragmentary, for no man can be justly blamed for failing to acquire greater knowledge if he has learned the little that is available—however little that may be.

Ours is considered a learned profession, we enjoy great privileges and have correspondingly important duties to the public, we hear it asserted frequently that our profession is engaged in a great struggle to alleviate suffering and to ameliorate the condition of mankind. It is indisputably true that a vast amount of our energy is thus directed, but unfortunately, it is just as indisputably true that we have permitted ourselves to become the "dupes and accessories" of nostrum venders, we have continued to prescribe nostrums that have been proved to be fraudulent even though not a word of evidence has been offered in their defense. We have accepted fees for prescribing drugs and nostrums about which we knew no more than did those for whom we prescribed, we continue to support medical journals that assist in the exploitation of nostrums that are known to be useless, we admit profound ignorance regarding the actions of all of our drugs, and yet we spend little time in investigating them. We use drugs recklessly when we are employed to save life and are trusted as men in no other profession, we take words out of the mouth of ignorance and proclaim them with authority, we take statements without evidence to support them, and on them base the treatment of the sick, but we would not risk our savings on the strength of such flimsy assertions.

I would that I had the power to carry home to every individual member of the medical profession a sense of his duties to the public, to his profession and to himself so that he might see himself in his true light, for I believe that our failure to correct these abuses is, as stated in the report which I have frequently quoted, due to inertia and not to a deliberate neglect of a duty that will become plain to any one who will be honest with himself and analyze the situation carefully.

I am well aware that I have used forcible language, but I would remind you that I speak for myself no less than for many others. I would bring it home to every man in the medical profession that not one member of it can say that he bears no share in its guilt, unless he has done the utmost that lies in his power to correct abuses that are so apparent to all who will see.

I would gladly close my address with an appeal directed solely to the high sense of duty, the integrity and to the honor of the men in the medical profession, but unfortunately we have seen that the most stirring appeals fall on deaf ears, that those who hear consider that they are not concerned in the abuses, and that the abuses continue unchecked despite the clearest analyses and the most earnest entreaties that can be urged. The time has come to consider whether other measures should not be adopted.

In the course of my efforts, as chairman of the Council's Committee on Medical Education, to secure cooperation in promoting the work of the council, I consulted a gentleman who had wide experience and much success in correcting some of the most flagrant abuses that afflicted medical education. He manifested a willingness to aid the committee, but at the same time he expressed the firm conviction that a direct appeal to the public must be made in order to bring practicing physicians to a realization of the nature of the offenses of which they were guilty, and he urged me to lay the facts before the writer for a popular magazine just as I had presented them to him.

I believe that it is far better for us to correct our own mistakes, but I also believe that unless we do correct them without unnecessary loss of time the appeal to the public should be made, and, to quote again the special report of the committee of the Board of Trustees, "The thinking members of the profession recognized the evil, and year after year resolutions were passed by the American Medical Association, calling on the profession for an enlightened stand on the subject, but no practical results were obtained." The report then states that the Council was formed and that it has exercised enormous influence not only here but also in Europe, especially in England and Germany, but further on in the report we find the following statement "Today we have this anomalous condition. The medical profession through its authorized agency (the Council) has shown certain medicinal preparations to be fraudulent, the same medical profession, however, is supporting medical journals that are promoting these very preparations and in some instances accepting advertisements which the lay press rejects as fraudulent. The condition is not only anomalous—it is ridiculous." The report suggests the remedy, but just as resolutions were passed year after year without practical results, this ringing appeal to the medical profession has not produced any improvement that I can perceive.

An eminent historian has said that it is as wicked as it is vain to attempt to deny the teachings of history, and I would have the members of the medical profession examine the teachings of history so far as they apply to the present anomalous conditions in therapeutics. I will cite one or two facts of recent history that have an important bearing on the questions now under discussion.

Nearly every one present remembers the autocratic and oppressive insolence of which corporations, and especially those controlling the great railways of the country, were guilty but a few years ago. They then seemed to enjoy privileges that enabled them to look with scorn and derision on the individual who protested against their injustices. But what is the result? In answer I will read a paragraph taken from the New York *Times* of the day on which this article was written.

> We have been deposed. The head of a railroad today is little more than a chief clerk under orders. He finds himself hedged about with countless restrictions. If he finds that some rate is too low and tries to raise it, he has a federal or state commission to deal with, who are hard to convince that any railroad rate should ever go up. If he needs more money, and succeeds in convincing the commission that he does, he is told to get it some other way than by raising rates. When he tries to get it that other way he is told by one or the other commission that it is against the law.

In the case of the railroads, as in the present instance, appeals and warnings alike fell on deaf ears, and retribution has overtaken those who would neither hear nor see.

I will cite another fact of recent history that may come nearer home to you. We were all aware of the long standing abuse of habit-forming drugs and the terrible effects of their use. Again and again appeals were made to the medical profession to take steps to control this evil, and although it was well known that physicians were responsible for a part of the evil, no practical results were obtained.

What is the result? The public, together with a few physicians in sympathy with it, took the matter into its own hands and we have the Harrison Narcotic Law, against certain provisions of which physicians complain, and in New York we have a far more irksome state law against which the members of the medical profession, almost to a man, rail in impotent wrath. This is another instance of retribution for long continued indifference.

Is there any one so blind that he will not see the application of these lessons to the conditions which now obtain in therapeutics? What will the public do if it is thoroughly aroused to the facts set forth again and again in the discussions of the subject by leaders in the profession like Councilman, Harris, Grant, Tyson and Wood, in which they are forced to use such ugly words as "fraud," "dupes," "therapeutic superstition," and "recklessness in the use of drugs"?

414 East Twenty-Sixth Street.

The Course of the Student.—From the very day on which a young man begins his medical studies he should frequent the hospital. He should be constantly viewing sick people. I demand that the young student should visit the hospital every day. Very soon in his courses, after a few months of study, the pupil should begin to collect and jot down his own observations at the bedside. I believe that I should fail in my duty if I did not insist on this point. To know the natural course of diseases is more than half of medicine.—Trousseau.

A STUDY OF TWO HUNDRED AND TWENTY-SIX CASES OF CHOREA *

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Notwithstanding the voluminous literature on chorea at our disposal, many of its phases are yet open to discussion. The principal reason for this is the fact that we are still groping in the dark as to the etiology of the disease. This uncertainty is the cause of the many different interpretations as to the predisposing factors that give rise to the disease. We must therefore seek for more circumstantial evidence, so to speak. Any additional information that will assist in clearing up the facts connected with the disease will be of value. Having at our disposal the records of cases treated by us and our colleagues at the Sarah Morris Hospital for Children, we desire to present, in the form of a statistical study, a summary of our experience.

Frequency.—It is a well-known fact that chorea is one of the common diseases of childhood. See, in the course of twenty-two years of activity in a children's hospital, treated 531 cases of chorea, approximately 0.8 per cent. of all cases. Rufz found 189 cases of chorea among 32,976 sick children, about 0.5 per cent. Wicke, on the other hand, observed the disease in only 0.18 per cent. of cases. Our records show a total of 226 cases of chorea treated since 1880, the year in which our general hospital opened. During these years about 80,000 patients have been treated. Of this number about 10,150 were children, making the chorea cases about 2.2 per cent. of the total. We may mention here that of the 226 cases treated at the hospital, some of the clinical records are incomplete or indefinite, and for this reason not all of the information sought can be supplied in this report.

Age.—Friedlander claims to have seen congenital chorea in two sisters, and Mayo tells of a case in which the fetus was affected with chorea as a result of a fright of the pregnant mother. Sachs claims to have seen chorea in children under 1 year of age, while the earliest age at which Wicke saw chorea was 2 years. Soltmann saw one case in a girl aged 3½ years, which, however, proved to be a tumor cerebri. The youngest case Holt mentions is that of a child of 4. The majority of writers on the subject agree that the age of most frequent occurrence of the disease is between 5 and 15. Of 522 cases quoted by Osler, 380 occurred during this period. Of 146 patients treated by Holt, seventy-two were between 5 and 9 years, and sixty-eight between 10 and 14. Of 439 patients, McKenzie saw 43 per cent. between the ages of 10 and 15, and 34 per cent. between the ages of 5 and 10.

Our age incidence ranged from 3½ to 18 years. Two cases were seen in children 3½ years old, and one case in a girl of 18. The age of most frequent occurrence, however, coincided with that given by most authors. Our greatest number of patients were between the ages of 5 and 14, with the highest percentage between the ages of 7 and 12.

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* Read before the Section on Diseases of Children at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916.

Sex —It is agreed by all authors who have written on chorea that the disease is more prevalent among females than among males Of 327 cases treated by Wicke, there were 117 boys and 210 girls Sterner, out of 275 cases, had sixty-one boys and 214 girls Osler analyzed 554 cases, and found 71 per cent females and 29 per cent males Of 184 cases treated by Sachs, 136 were females and 48 males Gowers, from a collection of 1,365 cases, found the proportion of girls to boys to be 3 1

Our records show 151 girls and 75 boys, a ratio of 2 1, somewhat less than the proportion of most of the authors

Season —Morris Lewis, in a collection of 717 cases, found the smallest number occurring in November (3 3 per cent), with a rapid rise in December (7 8 per cent) The number remained about the same during January and February, rising to its height in March (14 per cent), and falling in April (8 7 per cent) In May the percentage increased again to 11 1 per cent , after which there was a steady decrease to the lowest point of the curve in November

Of his original 100 cases, Gowers found 33 per cent occurring in the first three months of the year , 25 per cent in the second three months , 20 per cent in the third, and 22 per cent in the fourth Gowers reports cases in which relapses took place at the same season for several successive years

Our records show the time of the year at which the children entered the hospital, which may be considered as the time of onset of the disease January showed the highest number of admissions with chorea, December the next highest, and October the lowest Our records do not corroborate Gowers' assertion as to the seasonal recurrence of the disease

Rheumatism —It is customary in medical literature to credit Roger (1866) with the conception of the relationship between rheumatism and chorea The fact is that as early as 1831 Thomson[1] considered the main cause of chorea as "metastatic rheumatic inflammations of the cord and its nerves " Hughes (1846) saw 104 cases of chorea in which only fifteen had no associated rheumatism or heart affection Bright[2] considered heart affections after rheumatism as the link between rheumatism and chorea This much, however, is true, that Roger was the first one who conceived the idea that articular rheumatism, affections of the heart, and chorea are parts of the same pathologic entity It was he who differentiated between chorea rheumatica, chorea cardiaca and chorea rheumatica-cardiaca, depending on which one of these affections or symptoms manifested itself first This view of Roger, Thomson and Hughes met a good deal of opposition Rilliet argued that the coincidence of chorea with rheumatism is far below the frequency of rheumatism as a disease, and were chorea dependent on rheumatism we should see more chorea in practice than we do Furthermore, chorea affects females more frequently than males, while the opposite is true of rheumatism Rilliet, therefore, thought the belief as to the relationship of the two diseases was an erroneous one

Romberg also saw no connection between the two diseases, and Wunderlich considered the rheumatic pain, often manifested in chorea, as a manifestation of hypersensitiveness and not as a rheumatic affection Steiner (1868) saw only four cases of associated articular rheumatism in 252 cases of chorea In recent years, however, the theory of the association of chorea and rheumatism has gained a good deal of credence Osler has secured histories of definite articular swellings in 15 8 per cent of his cases and rheumatic pains in 5 per cent of them In Starr's tabulation there is a history of rheumatism in 26 per cent of the cases quoted Heubner goes so far as to include chorea in the chapter of infectious diseases, and G F Still goes to the extreme of regarding chorea as much an evidence of rheumatism as gumma is of syphilis

Attempts have been made to establish the relationship of the two diseases bacteriologically Poynton and Paine, who cultivated the *Micrococcus rheumaticus* in cases of articular rheumatism also found the organisms in the brains in cases of chorea associated with rheumatism Richards[3] reported two cases of chorea in which a *Streptococcus viridans* was found in the blood He found the organism to be culturally identical with the description of the green-producing streptococcus of Schottmueller and probably not different from the description of the *Micrococcus rheumaticus* of Poynton and Paine Dick and Rothstein[4] isolated a streptococcus from the throat of a patient who had been suffering from chorea for five years and injected it into a dog which developed choreiform movements twelve hours after the injection Sachs also found a streptococcus in one case of chorea These, however, are isolated cases, and as yet we cannot claim to have proved bacteriologically the relation between chorea and rheumatism We must depend, therefore, on a study of case histories, although we admit that this is not the most satisfactory method of proving or disproving the relationship between the two

Our records in this connection are interesting from a negative point of view While it is our belief that chorea has an infectious origin, from our records of 143 cases in which special mention was made as to history of rheumatism previous to attack, only thirteen cases gave a definite history of articular rheumatism Eight cases gave a history of pains in the legs, one of pains in the hip, and two gave doubtful histories In 119 cases it was definitely established that there was no manifest rheumatism preceding the chorea If in addition to these we exclude the nine cases that gave a history of pains in the extremities, and the two cases which were of a doubtful nature, there remain but thirteen cases that show a positive history of rheumatism, compared to 130 cases in which the history of rheumatism is negative

Tonsillitis —Our records show similar findings regarding the relationship between chorea and tonsillitis We have complete records of 135 cases, out of which ninety, or 66⅔ per cent , give no history of tonsillitis, and forty-five, or 33⅓ per cent , give a history of tonsillitis These findings seem to contradict the supposition that chorea depends only on diseased tonsils This opinion is at variance with the one expressed by many authors who claim that the majority of cases of chorea have their inception in the tonsils

Infectious Diseases —A number of authors have attempted to show the relationship between chorea and some infectious diseases Trousseau mentions cases of chorea developing from one to three months after scarlet fever. He thinks that children who are affected with rheumatism after scarlet fever seldom escape chorea. In about 6 per cent of his cases of chorea Priestly found scarlet fever as the only previous disease. Sinkler, on the other hand, found a history of scarlet fever in many of his 853 cases of chorea, but only eleven that shortly preceded the onset of the disease. He sees no special connection between the two diseases. Gowers is of the same opinion as Sinkler. Sturges believes that a history of whooping cough occurs more frequently in choreic than in nonchoreic children. The same has been ascribed to measles. Our records show that nearly all of the chorea patients had measles, but there were only two in which the measles was followed directly by chorea.

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[1] Thomson London Med Gaz 1831

[2] Bright Cases of Spasmodic Disease Accompanying Affections of the Pericardium London Med Chir Tr 1839

[3] Richards J H Chorea The Journal A M A , Jan 10, 1914, p 110

[4] Dick G F and Rothstein T A Streptococcus Producing Symptoms of Chorea in a Dog The Journal A M A , Oct 11 1913 p 1376

Twenty-six cases gave a history of whooping cough, none of which, however, came on directly after the disease. Twenty-five cases gave a history of scarlet fever, only two of which followed the disease directly.

It is interesting to note that in the two cases that followed scarlet fever there is no history of rheumatism. Our records do not seem to justify the claim of intimate relationship between chorea and infectious diseases, although it is reasonable to suppose that an infectious disease may precipitate chorea in a child by producing a focus of infection in the central nervous system.

Syphilis.—Of late there has been a tendency among French authors to claim a connection between syphilis and chorea. Milian reports fifteen cases of chorea with positive syphilis in eleven cases, or 73 per cent. Apert, Rizard and Babonulit emphasize the connection between the two diseases. Some have even gone to the extent of treating every case of chorea with salvarsan or neosalvarsan (Weill, Monsiquand and Goyet). On the other hand, neither Koplik nor Comby sees any relationship between the two diseases. Our records show two cases in which there were definite manifestations of congenital syphilis. This, however, would not warrant us in drawing any conclusion as to the relationship of the two diseases. We take it as a mere coincidence, just as we would the presence of mumps under the same circumstances.

Other Factors.—Two of our cases followed trauma of the head. One attributed chorea to a fright. Two patients were epileptic, and probably the choreic movements were of central nervous origin. While we consider chorea to be of an infectious nature, there is no question in our minds that shock and trauma may act as the immediate exciting causes.

Symptoms.—Generally speaking, all of our cases manifested symptoms similar to those described by other authors on the subject. We wish, however, to call attention to one special phase of these symptoms, namely, the localization of the choreiform movements, particularly at the beginning of the disease.

Wicke, in 1844, denied the fact that hemichorea occurs more frequently than general chorea, and that the left side is more susceptible to the movements than the right. Sydenham, Thompson and Cullen, on the other hand, speak in favor of unilateral chorea. Recently the tendency has been to overlook the localization of choreic attacks and to consider them as generalized. The cases that came under our care very often showed one side more affected than the other, the left showing the greater involvement. In the series of cases which we present, in 153 (the rest of our series have no record as to generalization or localization of symptoms) we found a record of forty-six that showed greater involvement of one side or one part of the body. Thirty-nine cases showed a localization on one side, twenty on the right and nineteen on the left. We are under the impression that the number of cases with greater involvement of one side exceeds the number noted in our records. Some cases were not observed early enough for report, and others were probably not observed for localization. At any rate, we feel justified in making the statement that there is localization of symptoms in chorea.

Complications.—Endocarditis. Fagge found cardiac changes in seventeen out of eighteen necropsies of chorea, in five of which death was not due to the severity of the disease. Gowers, in forty cases of chorea with organic heart disease, found strong ground for attributing the cardiac affection to previous rheumatism. Our records show seventy-three cases of cardiac affections in 226 cases of chorea, the majority of which were diagnosed as mitral insufficiency, one was diagnosed as myocarditis, two as single aortic insufficiency, and one as double aortic.

Other complications were few, and these, as far as we could see, were not direct complications of chorea. In one case measles developed while the child was in the hospital; there were also bronchitis, osteomyelitis, tuberculous glands and psoriasis. Headache and vomiting were frequent. Another complication we noticed was psychic disturbance. Besides the difficulty in speech which we observed quite frequently, we saw a few patients with melancholia and mania. We recall one case in particular in which the child was very maniacal even after the abatement of the choreic symptoms, the mania changing to a melancholia which lasted for several weeks.

Prognosis.—The British Medical Association Investigation Committee gave the death rate of chorea at 2 per cent. It does not state, however, whether the death was due to the chorea proper or to some complication, as heart disease or rheumatism. Langmead believes that death by exhaustion is very rare.

In our series we had two deaths, making a little less than 1 per cent of the total. In both instances death was the direct result of chorea. One was a boy of 14 who had no complications, but was very restless and had a very high temperature. No treatment was of avail. The other was a girl of 13, with such violent symptoms that she tore the skin from her body. Morphin, scopolamin and lumbar puncture had no effect in quieting her. The patient did not yield to treatment and finally succumbed from exhaustion.

Duration of the Disease.—According to Rilliet and Barthez, the acute chorea from which the patient recovers usually lasts from six weeks to two and one-half months. Rufz gives thirty-one days as the average duration. Dufose gives fifty-seven days, See sixty-nine days (117 cases), Wicke eighty-seven and Moynier thirty-three to thirty-seven days for girls and from seventy-four to eighty-one days for boys. Romberg reports a case of a woman seventy-six years of age who has suffered from chorea since her sixth year. Sachs found the duration of the disease in his cases to vary from four to twelve weeks.

Our records show only the length of time the patient remained in the hospital, which in most cases is a good criterion as to the duration of the disease, the majority having been brought to us at the beginning of the disease, that is, as soon as the symptoms became pronounced. Our cases showed a variation of from one to 369 days, the former, a patient who refused to stay longer at the hospital, and the latter, a patient who developed complications The average cases which were marked *improved* or *cured* (which, by the way, is a relative term) ranged as shown in the accompanying tabulation

The greatest number of our patients remained at the hospital from one to five weeks, the next highest number from five to eight weeks, as indicated in the tabulation

Recurrence—According to See, chorea recurs if the disease lasts more than sixty-nine days during the first attack See saw thirty-seven recurrences in 157 cases Steiner had eight recurrences in fifty-two cases Fredericks saw from ten to twelve recurrences in one boy Among 104 patients, Sachs found that fifty had one attack, seventeen had three attacks, twenty-six had two, seven had four, three had five and one patient had eight attacks

In our series, thirty-five patients had more than one attack of chorea Of these one had very frequent recurrences, one had four recurrences, four had three, and twenty-nine patients had two recurrences The recurrence seemed to have no relation to the nature of the treatment Some patients who had received the arsenic treatment showed recurrences while others who did not have arsenic had no recurrence

DURATION OF CASES IN WHICH THE PATIENTS WERE IMPROVED OR CURED

Duration	No of Cases
From 1 day to 1 week	11
From 1 to 2 weeks	25
From 2 to 3 weeks	16
From 3 to 4 weeks	23
From 4 to 5 weeks	24
From 5 to 6 weeks	13
From 6 to 7 weeks	16
From 7 to 8 weeks	10
From 8 to 9 weeks	6
From 9 to 10 weeks	6
From 10 to 11 weeks	4
From 11 to 12 weeks	2

Treatment—A disease that has been known in one form or another for several hundred years must necessarily have to its credit many forms of treatment and many drugs for which specificity has been claimed Graduated massage was recommended by Laissne (1854) and Parrot (1858), baths by Rufz, Mead and Crampton, electricity by Briquet and Doucheme, venesection and purging by Sydenham and West, iron and bromid by Da Costa, and zinc oxid by Romberg Trousseau recommended opium, Schultz, atropin, and Martin (1813), Bradsley, Gregori, Eberle and Romberg recommended arsenic Of all these remedies arsenic seems to have had the best fate even to the most recent time Seguin, Jacobi, Heubner, Rochford and Osler all recommend arsenic, some even in large doses, Osler having given as much as 25 minims three times a day

Recent literature contains records of treatment by tonsillectomy and salvarsan Our experience has taught us that there is no specific drug for chorea, and that treatment by drugs, not excepting arsenic, is not so effective as rest in bed We have given salicylates for the probable rheumatic origin of the disease Those patients who were treated without arsenic improved just as rapidly and as well, with as few recurrences, as those treated with arsenic preparations In fact, we believe that the fewer drugs given, the better the results As to treatment by arsenic, is it not a fact that many cases treated by it have been followed by arsenical neuritis? We have found this to be true in our experience as well as in that of others Besides, is it not possible that the arsenic has a deleterious effect on the heart innervation or heart muscle? In our opinion, rest, baths and salicylates are the remedies to use in ordinary cases of chorea, except in those instances in which medication must be given for special symptoms, such as that mentioned when considering the question of prognosis As for salvarsan, it seems unfair to treat chorea with it unless the syphilitic manifestations indicate salvarsan treatment, in which case it should be given for the primary disease and not for chorea

CONCLUSIONS

1 The frequency of chorea in our cases was about 2 2 per cent of all children treated at the hospital

2 The age incidence ranged from 3½ to 18 years The ages of most frequent occurrence were between 5 and 14

3 We found the ratio of females to males to be 2 1

4 Season did not play a constant role in our cases The greatest number were observed in December and January, the smallest number in October

5 In our patients the relationship between rheumatism and chorea was not marked Thirteen had a definite history of rheumatism, 130 had no history of rheumatism We believe in the relationship between chorea and rheumatism, although our cases do not bear it out

6 Tonsillitis was not a prominent factor Sixty-six per cent of our cases had no history of tonsillitis

7 In our series, infectious diseases were frequently found to precede the onset of chorea, but there seemed to be no close relationship between infectious diseases and chorea

8 Syphilitic manifestations were present in two of our cases They seemed, however, to have no connection with the chorea

9 Localization was frequent

10 Endocarditis was frequent, though not a constant complication

11 The mortality in our cases was a little less than 1 per cent

12 The duration of the disease varied from one day to more than a year The average duration was from two to eight weeks

13 Recurrences occurred thirty-five times One patient had four recurrences, four had three and twenty had two recurrences The method of treatment had no direct bearing on recurrences

14 For treatment we are strongly in favor of rest in bed and complete isolation, baths and salicylates We do not believe that arsenic has any special effect on the disease, if given in too large doses it may be pernicious

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ABSTRACT OF DISCUSSION

Dr H F Helmholz Chicago Dr Abt referred to the relation of chorea to manifestations of a rheumatic cycle We had about 138 cases Of these 33 per cent had a history of repeated tonsillitis, 21 per cent of rheumatism and 26 per cent of endocarditis, 8 per cent of rheumatism and tonsillitis, 21 per cent of rheumatism and endocarditis, and 54 per cent of the entire group showed manifestations of one or the other of these symptoms As regards the relationship of chorea to the rheumatic cycle, it seems to me that we have to look at it from a different point of view, if we take into account the recent work of Rosenow We know the streptococcus has a specific tendency to localize in the heart valves or in the joints The same organism under slightly different circumstances may localize in the cortex of the brain A negative finding proves practically nothing We all know what tremendous difficulty we have had in isolating organisms from joints in acute rheumatic fever, and it is only since Rosenow has pointed out a specific technic that we have been able to find this organism in the other group of cases The same thing applies also to chorea, we have in this case an infection with an organism having a peculiar tendency to localize in the cortex

Dr Abraham Jacobi, New York I have seen a good deal of chorea and rheumatism I wrote on the subject in 1875 in connection with my essay on rheumatism in children, and at that time came to the conclusion—and I own up to that conclusion yet—that chorea and rheumatism and endocarditis are in very close relationship, that the order of infection was that frequently rheumatism came first endocarditis second and chorea third Changes in this series will take place Now and then a case of chorea will come first There is only one thing I would urge—that rheumatism, which in my experience always comes first, should not be overlooked, for rheumatism in the small child is very frequently overlooked and put down as "growing pains ' Small children will often have rheumatism that will only be discovered on attempted movements on the part of the nurse or mother It seems to me that we have made very little progress as far as arsenic is concerned as a remedy I will admit I have used a great deal of arsenic I do not believe in its frequent effect as a detrimental agent On the contrary in the young and in the adult arsenic is a tissue builder and a very useful one, and I use arsenic a great deal among children and still more among adults as a tissue builder For instance in so-called chronic myocarditis, where patients are run down, where they have a functional murmur there arsenic will do good because it is just like phosphorus in other conditions—it is building up the tissues I recommend arsenic as a result not of one year, but of many years' use in a fairly well developed general practice So arsenic is looked on by me rather as a help in therapy than as a danger In excess it may prove dangerous, like everything else In anemia and allied conditions I consider arsenic valuable in the development of the tissues Dr A L Goodman the attending physician of the Jacobi Children's division of the German Hospital in New York says chorea is curable not after months and years or even weeks but in a very few days He withdraws blood from the patient say 40 c c He takes the serum amounting to about 18 or 20 c c, and injects it into the spinal canal of his patients, no matter how serious even in the worst cases Patients are sometimes cured in one day If not cured in one day, but merely relieved, he makes another injection of the same kind within one or two days Then almost every patient is cured and remains so

Dr Harry Lowenburg Philadelphia I had the pleasure of seeing some of Dr Goodman's work in New York I made rounds in the hospital with him and observed his method of treatment and also the manner in which the blood is secured and the results of treatment I believe with Dr Abt that rest in bed is an important part of the treatment It is sometimes necessary to treat the parents as well as the child A recent case, one of violent chorea with irregular heart, came under my observation in Philadelphia The chorea and the heart were both improved by rest in bed and Schott baths The lad returned to his home I found that the father had a violent temper and amused himself by whipping the child or by putting him into a dark closet or threatening to do so The boy had a severe recurrence The treatment in this case was to remove the vicious environment I did so by sending for the father and threatening him with arrest He was humbled and became repentent The lad improved again and was sent to a summer camp I feel that a children s ward in a general hospital is hardly the place to take care of chorea cases I believe that they should be excluded from all sources of external irritation This can only be accomplished by complete isolation and careful individual supervision

Dr I A Abt, Chicago The matter may be summarized as follows In many instances chorea undoubtedly is infectious in origin I think there are cases however that simply indicate nerve exhaustion or nerve fatigue in which no focal infection can be discovered Every practitioner has seen children come to him from neuropathic families, where there may have been worry, grief, or some other condition leading to nerve instability of the children They are often bright at school overwork and sometimes they have difficulty in their school arising from their studies They give no evidence of focal infection Such children when isolated and placed at rest very readily recover I believe chorea is not due to a single cause and that it is not due to a specific rheumatic infection I think it is a symptom of a certain nerve condition, depending on various causes As far as Dr Goodman's treatment is concerned, of course we are all extremely interested I want to say a word about arsenical treatment and rest in bed For years I have had children brought to me with chorea One of my colleagues might have a case in an opposite bed I would say, "You treat with arsenic and I will treat *without*" The baby without arsenic, but with rest in bed would recover just as rapidly as the other child treated with arsenic The child's term in the hospital would be no longer than with the arsenical treatment I think at the hospital we are now treating them without arsenic It seems to me the treatment of these cases of chorea, especially in neuropathic children without heart lesions and no evidence of infection, is to take them away from their family, feed them keep them absolutely quiet in bed, give them hot baths, and they generally recover in a short time

FEVER OF OBSCURE CAUSATION IN INFANCY AND EARLY CHILDHOOD *

EDGAR P COPELAND, M D

WASHINGTON, D C

Fever of obscure causation in infants and young children is always of interest, because it is a condition with which we are more or less constantly confronted The term "obscure causation" is of course used in a relative sense, for it must depend on the number of cases being observed and the diagnostic acumen of the individual observer Apart from such considerations, however, there will be encountered, from time to time, febrile movements, the causation for which is solved with the greatest difficulty, or sought in vain by the most astute It is my purpose, not to endeavor to discuss all of the causes of obscure fever in infancy and childhood, but to draw attention to some groups of cases that have given me some trouble during the past year

It seems not amiss at this time to emphasize the role of the nervous system in the production of obscure fever, even though it is already well appreciated As compared with the fully developed system of the adult, that of the new-born is both anatomically incomplete and physiologically deficient Even the vital centers participate in the uncertainty of its action, as so well observed in the inordinate disturbances of pulse and respiration with which we are so familiar With regard to function, the most striking deficiency would seem to be in the matter of inhibition As a result of such shortcoming, reactions to stimulation, both from without and within, find their expression in uninhibited explosions of nerve force characterized by protean manifestations So it is that the heat regulating mechanism, if we may so designate that vital part of the nervous system, responding to insult, traumatic, thermal or toxic, produces inordinate disturbances of body temperature

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NERVOUS INSTABILITY

While common to all young alike, this tendency to faulty control or inhibition is most conspicuous in those who, by reason of harmful prenatal or postnatal influences, manifest instability of the nervous system in other ways, as seen for instance in so-called neurotic children It is no uncommon experience to observe in such individuals, and indeed in those who may be considered normal, rises of temperature at times which absolutely defy recognition on any other hypothesis, unless one elects to look on them as illustrative of the limitations of our diagnostic methods

Such rises of temperature are most often acute in character, but may continue over varying periods They are in no sense uniform in behavior, and possess nothing in common, except it be the absence of adequate cause They may represent either increased heat production or decreased heat elimination, one or both, but in any event nothing further than an abnormal response of the organism to the ordinary stimuli of daily existence While such a diagnosis is acceptable only after a most careful exclusion of all other possible factors, I am convinced that, in the present state of our knowledge at least, such instances of unexplained fever will occasionally be observed in those whom from manifestations of nervous instability we designate neurotic Such children are especially apt to be rachitic and frequently show evidences of tetany, laryngismus stridulus and general convulsive seizures

Not only are such individuals the common subjects of such disturbance, but as a class they are especially prone to what may be termed abnormal rises of temperature from trivial cause The family physician became familiar with such idiosyncrasies in the children under his care, and was said by the parent to "know their constitution" I have seen several such cases in the past year, and in each instance, not "knowing their constitution," reached a conclusion only after lengthy investigation and no little anxiety

The following case is illustrative of this type

A girl aged 2½ years had been under my observation since 1 year of age She was an only child of neurotic parents and had been artificially fed from the third month on various proprietary foods Her progress had been marked by frequent convulsive attacks and she had been subject to rise of temperature without apparent cause I had been called in this particular instance because the fever had endured rather longer than usual I discovered well marked symptoms of rickets, but a most careful examination over a period of some days failed to establish a diagnosis in this case, and the febrile movement passed without a definite determination of its nature Two weeks later an attack of a similar nature presented itself, and after further study it was assigned to nervous instability The subsequent course of this child s progress would seem to justify the diagnosis

DENTAL CARIES

Turning now from the indefinite to causes more definite, but perhaps of more frequent occurrence and just as often overlooked, I wish to draw attention to dental caries as a cause of fever Dental caries in early childhood is a condition which should interest every medical man who has to do with the diseases of children, for it is vitally connected with their general welfare It is only in the past few years, with the development of the study of focal infection and a better appreciation of its serious possibilities, that the profession has awakened to the significance of disease of the mouth and its adnexa It is not within the purview of this paper to go into an elaboration of this subject, but I have been so impressed with its importance that I cannot refrain from this opportunity to give it emphasis I have made it a rule to insist on the correction of dental caries by good dentistry, conservative if possible but always corrective In my experience the average dentist is more interested in the mechanics of his profession than in real pathology and the physician does not always secure the proper cooperation in such matters imperative for the patient's welfare

The purpose of referring to dental caries here, however, is to connect it with certain disturbances of temperature encountered in children, and this quite apart from the associated inflammations in which the diseased tooth has served as a portal of entry for infection That dental caries can be a cause of fever cannot be denied It is rather a cause for reflection that it is not more often observed

As nearly as I can estimate, approximately 65 per cent of the children presenting themselves in the outpatient department of the Children's Hospital (Washington, D C) show more or less dental caries Most of these children have mouths wofully neglected and badly in need of attention In my personal experience during the past year I was able to single out five cases in which the fever was clearly due to diseased teeth These five cases were uncomplicated as to adenitis and other significant inflammation There were two boys and three girls, all between the ages of 1½ and 3 years They had been brought to the hospital because of loss of appetite, malaise and fever with excessive sweating The fever had been present for a varying length of time, and in one instance had been intermittent All presented marked dental caries, but were otherwise without definite findings In one instance I was able to secure a white cell count, the first showing 14,000, the second, one week later, 13,500, and the third, two weeks after the extraction of two carious molars, 9,500 In this particular instance the dentist operated with great reluctance, because the teeth were temporary, and were, as he assured the fond mother, necessary to the proper development of the bones of the jaw Two days after the extraction the temperature was normal and so remained

OBSCURE INFLAMMATION OF THE MIDDLE EAR

From the anatomic character of the infant's ear and its adnexa, and the special susceptibility of the young to infection from whatever cause, middle ear inflammation is exceedingly common, and has long been recognized to be a cause of obscure fever in early life

Ordinarily otitis media is associated with pain, fever, restlessness and other evidences of distress, though it is not infrequently present without such subjective and objective symptoms It is, further, most often possible to determine the presence of such inflammation from an examination of the ear itself, but I wish to draw attention to the fact that occasionally the most competent aurist is unable after repeated examination to make a diagnosis

The following case well illustrates this point

The child aged 14 months, a son of one of our local physicians was of neurotic parentage and had been artificially fed after the third month on pasteurized milk Dentition had been delayed and there had been excessive head sweating though the infant had been well up to normal weight It had suffered with follicular tonsillitis, which had been particularly prevalent in our city during the period, for two weeks and with it had had a marked febrile disturbance The local manifestations had about abated, and the temperature had been normal for a period of one week when the temperature again began to rise, and with it a return of restlessness and almost complete loss of desire for food Though the tonsils were hypertrophic, the throat was pale and there was no evidence of local disturbance of an acute nature The von Pirquet test was negative, as were repeated physical examinations, including a Roentgen survey of the thorax A most competent aurist failed to render any assistance The leukocyte count, however, was 20 500 Fever continued over a period of three weeks, irregular in character and frequently reaching normal Examinations of the ears continued negative, while the leukocyte count though somewhat lowered, remained well above normal Finally at my earnest solicitation a paracentesis was done which was followed by a scanty serous discharge, a rapid fall of temperature and a return of the white count to normal In the month that has elapsed, this infant has been completely restored to health and has progressed normally

This case serves to emphasize the fact that even the examination of the ear cannot always be relied on in the determination of middle ear disease, and I feel, therefore, that in obscure cases in which the leukocyte count is high and other factors have been properly excluded, paracentesis is justifiable This is especially true when the condition has been, as in this instance, preceded by disorders that are recognized to be predisposing causes

It might not be amiss to direct attention to the fact that, occasionally in otitis media, it is possible to observe drainage occurring into the pharynx through the eustachian tubes when the examination of the tympanic membranes is negative This interesting point, quite new to me, has been demonstrated to me by one of our aurists on two occasions during the past few months, and is worthy of consideration In neither of these cases could anything of a definite nature have been determined by the usual examination As a matter of fact, I have not infrequently had the experience of having ears pronounced negative only to find later that within a few hours after there had been spontaneous rupture and drainage This observation is in no sense a reflection on the diagnostic skill of the aurist, but rather a testimonial to the occasional obscurity of the disease

It is well, therefore, to bear in mind that disease of the middle ear is not only a common cause of obscure fever in the infant, but what is more important, that it is occasionally of such an obscure nature in itself as to render its detection difficult, if not impossible

OBSCURE DISEASE OF THE TONSILS

Judging from my own experience, both in my private and hospital practice, follicular tonsillitis was unusually prevalent among infants and young children in Washington, D C, during the past winter and spring Most of the cases have been clear and easy of recognition, others more or less obscure and difficult of determination, especially during the first few days after the onset The disease has shown a special tendency to lapse into a subacute stage, in which it has not been readily amenable to ordinary treatment In a number of instances, having despaired of terminating the attack, and having been fearful of the potential mischief in the diseased tonsils, I have referred cases for operation even when low grades of temperature were present The results have been gratifying, and the tissues removed have shown themselves to be diseased to an extent that could only have been surmised

As in the preceding consideration, it is to the obscure disease of the tonsils that I wish to draw attention I have made it a point to examine carefully the tissues that have been removed from my cases referred for operation, and as my experience accumulates, I am more and more firmly convinced that not only are these glands often more diseased than our examination would lead us to suppose, but that they are often the seat of infection when not suspected

Believing, then, that the infected tonsil is often a cause of obscure fever, and having in mind the remote dangers of tonsil disease, I have made it a practice to advocate its removal at whatever age it would seem to be indicated I am prompted to this expression because I have in a number of instances been opposed in such matters by throat men who balked at the age of their prospective patients

CONCLUSIONS

I am conscious of the fact that I have presented nothing new, but hope that I have at least emphasized and perhaps directed attention to some causes of obscure fever in infancy and early childhood that may have escaped the full appreciation that is their due

In the first group, that of nervous instability, I am well aware that it is most difficult to exclude many of the obscure disorders to which the young are especially prone, but I have made it a practice to place cases in this class only after the most exhaustive search and mature consideration

As to the second group, dental caries, I feel that much more might have been said had time permitted We are all perfectly familiar with the secondary inflammations resulting from neglected disease of the teeth, and, thanks to the dissemination of education in this particular, cases of this sort will become proportionately less common

The other two groups, obscure disease of the middle ear and obscure disease of the tonsil, are well known as old offenders I wish to draw particular attention, however, to the fact that middle ear inflammation may in itself be even more obscure than is generally supposed, and that tonsils may likewise be sufficiently infected to be a cause of fever without presenting the appearances indicating the need for their removal

The Rockingham

ABSTRACT OF DISCUSSION

Dr F M Pottenger Los Angeles Physiologic study shows that 80 per cent of heat is eliminated through the skin, 15 per cent through respiratory activity and 5 per cent through the feces urine, warming of food drink and air The elimination of heat is therefore largely under vasomotor control, through the sympathetics and is presided over by the vasomotor center in the medulla Fever is often a part of the syndrome of toxemia It indicates not only that there is more heat produced but that there is an interference with elimination Toxemia is accompanied by general sympathetic irritation, and this includes constriction of the vessels of the skin Toxemia may be produced by the parenteral introduction of any protein into the body When the protein finds its way into the tissues it is broken up and its toxic molecules are set free Ordinarily, the gastro-intestinal tract takes care and destroys protein consequently, it is assimilated without harm, but, if a fasting animal is given protein in sufficient amounts it may be absorbed and produce general toxemia including fever Stimulation of the vasomotor system with or without accompanying increased heat production, will produce fever All the depressive emotional states, which we meet with particularly in adults, will raise the temperature by stimulating the vasomotors and interfering with heat elimi ination Thus, we have an explanation for the rise in temperature due to nervous states

Dr Abraham Jacobi, New York I have thought a good deal about what has been written on the subject of tonsils and I wish to say that in few cases is the tonsil at fault Even large tonsils in a small child are not so dangerous as we are liable to be told It is not the tonsil that is at fault but the rest of the pharynx All those small lymphoid bodies so called Waldeyer's nodes and certain of the small bodies that surround the entrance between the nares and the throat are, as a rule more frequently the cause of toxic symptoms and fever generally than the tonsils themselves Meanwhile I have been teaching and practicing for fifty years and more that the nose must be kept clean The common atomizer will not do it You cannot clean the nose with an atomizer, you must irrigate the nose It may be done by pouring in some warm water and salt, only caution against snuffing, that is dangerous Bad results from nasal irrigation are the result, not of the irrigation but of snuffing, forcing the liquid into the ears Patients should be warned about this I have seen considerable ear disease from this cause

Dr St George T Grinnan Richmond Va I want to ask Dr Copeland if he has had any cases due to overexercise I have seen cases where we could find no otitis no tonsillitis, but the child had a temperature elevation for several months It had gone through several hands and very good hands, too The only thing I could assign this to was overexercise The child was extremely active With instruction as to rest the child was entirely well in two weeks In cases of what we call "obscure" rise of temperature, I really do not assume that either pyelitis or the ear can be called obscure any longer

Dr J L Morse Boston I want first to call attention to what seems a lack in our knowledge—that is as to the normal variation of temperature in the child So far as I know, we have no series of experiments to show us how far the normal temperature may go in the child Another thing in connection with obscure fever, we want to be sure the teeth are all right Unfortunately, we have in the United States a large number of dentists who are one or two generations behind the times who say that the first teeth should be left to take care of themselves I feel it is the duty of this society to show these men up and if it is possible drive them out of business The child may have infection from the teeth, even when they are filled We cannot be sure they are normal without roentgenograms Now and again will be found an abscess at the root of a tooth which will be the cause of all the trouble Dr Jacobi has touched on something I wished to say that is that children may have disease of the ethmoid cells and this may be the cause of the symptoms Dr Copeland did not say anything of infections of the urinary tract as a cause of fever This is often the cause of persistent fever

Dr C G Kerley, New York According to my observation a temperature under 100 F may be considered normal When the temperature ranges above 100 F every day or for several days or weeks I feel that the child needs close observation In addition to examining the patient I put him to bed for three days During this time the child is examined for the presence of occult pus malaria, typhoid fever, pyelitis, etc In not a few cases our clinical examinations are entirely negative and the rise in temperature which has been a daily occurrence has ceased entirely This puts our cases among that class of children who readily develop a slight rise in temperature as a result of excessive play, overwork or excitement The temperature during the time of the enforced quiet is taken three or four times a day

Dr E P Copeland Washington, D C I would first lay special emphasis on the fact that I did not mean to discuss all of the causes of obscure fever It would be an interminable task In certain types of children undue excitement overexercise may produce fever Otitis media is one of the most difficult of causes to determine I enjoyed Dr Morse's remarks in respect to dentists I have a great deal of trouble with them Infections of the alimentary tract I will not allude to I aimed to confine my remarks to cases that have given me trouble in the last year or so The question of normal temperature is important A reasonable variation has been allowed for in my cases

THE RECENT EPIDEMIC OF GRIP

JOSEPH A CAPPS, MD
AND
A M MOODY, MD
CHICAGO

Last winter an epidemic of grip swept over the United States Accurate information concerning its prevalence is difficult to obtain, because in most communities the disease is not reportable But judging from the public health reports and from personal correspondence with experienced physicians in many cities, it would seem that few of the large cities escaped Meager reports from small towns indicate that they were no more fortunate in this respect than the cities

Statistics which give an idea of the percentage of morbidity are meager We have secured the written records of patients ill with grip from four hospitals in Chicago Of a total of 677 persons investigated, 144 or 21 per cent, were confined to bed for one or more days This does not include many who had colds of less severity

The epidemic began early in December, and by the latter part of January had nearly spent its force

Was the disease essentially different from the ordinary winter colds?

Most cases began rather abruptly with coryza, pharyngitis, laryngitis or bronchitis The chief complications were inflammation of the accessory sinuses of the head, and bronchopneumonia, the latter being responsible for most of the fatalities None of these symptoms taken alone would justify the distinctive name of grip But the widespread and almost simultaneous onset of this fairly uniform symptom group and the rapid cessation of the epidemic after a few weeks reminded physicians generally of the great grip pandemic of 1889-1890 This resemblance was further strengthened by the unusual prostration lasting days or weeks after even mild attacks The older practitioners can recall no similar epidemic during the twenty-five years intervening between 1890 and this year The numerous epidemics of septic sore throat have all been entirely different in their symptomatology, and all were restricted to certain localities The term "grip," therefore, seems justified from a clinical standpoint

Leukocytosis —We studied the leukocyte reaction in fifty-three cases

In thirty cases there was a count of 10,000 or less A number showed leukopenia In sixteen cases there was a leukocytosis of from 10,000 to 15,000 In seven cases there was a leukocytosis of 15,000 or more It is seen from these figures that in the majority of patients leukocytosis was absent, although a temperature of from 1 to 3 degrees above normal was the rule at the time of examination

Pneumonia —The public health reports offer evidence of an unusual prevalence of pneumonia in the larger cities Nicolas[1] calls attention to the fact that the incidence of grip was greatest in those cities in which the mortality from pneumonia was most strikingly increased According to Mathers, a large proportion of the pneumonia cases in Chicago were of the bronchial type, such as was known to have occurred so often as a complication in the great pandemic

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[1] Nicolas Bull Dept. Health New York February 1916

BACTERIOLOGY

If physicians are generally agreed on the existence of a grip epidemic, it is equally true that bacteriologists have failed to agree on the causative organism

An analysis of throat cultures taken from fifty cases clinically diagnosed as grip and sent to the New York City Health Department was reported by Williams[2] as follows streptococcus, twenty-six cases, pneumococcus, nineteen, *Micrococcus catarrhalis,* eighteen, influenza bacillus, nine, with other less important organisms

Moody[3] examined a series of thirty-one cases of supposed grip at St Luke's Hospital, Chicago Cultures from the throat were grown on blood agar All the cases showed *Streptococcus viridans* and pneumococcus, and all showed hemolytic streptococcus in variable numbers The influenza bacillus was found only twice

Mathers,[4] in a similar group of twenty-four cases obtained cultures of hemolytic streptococcus in seventeen and *Streptococcus viridans* and pneumococci in all No instance of influenza bacillus was recorded

Reports received by correspondence from Philadelphia, Baltimore, Boston, Cincinnati and San Francisco state that the influenza bacillus was rarely found in throat or sputum cultures

We may then infer, first, that the infection showed many organisms, the streptococcus and pneumococcus predominating, and secondly, that the influenza bacillus was not often identified It has been suggested that the examination may have been made too late in the course of the disease to discover the influenza bacillus, which could be crowded out by the other bacteria In a number of typical cases, however, in which cultures were made early in the disease by Moody, the results were the same as in older cases From a cultural standpoint the streptococcus deserves more serious consideration as the causative organism than the influenza bacillus The possibility of some ultramicroscopic germ being the cause of the disease is suggested by the investigations of Kruse[5] and more recently by Foster,[6] who was able by inoculation of filtrated nasal secretions to reproduce the symptoms of common cold

Was the influenza bacillus responsible for earlier grip epidemics?

It is interesting that the two organisms most constantly described in the pandemic of grip of 1889-1890 were the streptococcus and pneumococcus Not until 1892 during a recurrent epidemic did Pfeiffer[7] publish his discovery of the influenza bacillus, and it is still unproved that this organism was a factor in the earlier and more extensive pandemic

When we call to mind the marked tendency of the influenza bacillus to appear as a secondary infection in measles, whooping cough and other respiratory diseases (Davis), the role of this organism in grip may well be questioned

Transmission of Grip —The theory commonly accepted is that the disease is spread directly from one individual to another Although Leichtenstern advocates this hypothesis, he calls attention to the fact that in many large institutions, prisons and hospitals, the inmates were almost immune, while the disease was prevalent among attendants, employees and visitors A similar relative immunity of patients has been commented on in two large hospitals in Chicago

At present no evidence has been offered to implicate milk, water or food as mediums of infection, and the appearance of the disease over the whole country at nearly the same time renders such means of transmission very improbable

Nicolas notes an outbreak of grip among horses in New York, characterized by a high mortality from pneumonia A similar epidemic among horses at the Chicago Stock Yards was exhaustively studied last winter by Mathers This investigation affords most interesting and valuable results The nasal secretion at the very beginning of the disease yielded pure cultures of streptococcus Death from bronchopneumonia was common Cultures from the lung likewise showed almost pure growths of hemolytic streptococcus Further investigation of the relationship of the strains of streptococcus obtained from equine and human influenza opens up the most promising opportunities of solving the problem

MEANS OF PREVENTION

As we look back on this epidemic, we may well ask what we have done to prevent its inception and its dissemination Have we profited from the knowledge of the last pandemic of grip, and have we developed any measures of defense against the ancient foe? Not in any adequate measure Nor is it possible to make headway along preventive lines until we have a better understanding of the etiologic factors, the bacteriology not only of the throat, nasal and bronchial secretions, but also of the blood, the results of animal and human experimentation with cultures and filtrated secretions, the comprehensive study of clinical observations, the systematic collection of data on its prevalence in institutions, in towns and cities, and the further investigation of influenza of horses and other animals

The Need of More Field Work —We have plenty of research institutions, plenty of state and municipal laboratories, plenty of men capable of doing first class investigation The trouble lies in bringing together the problem and the investigators This year's experience illustrates the fact that epidemics cannot be properly studied in hospitals alone or from the material that is sent in to our health laboratories Since the mountain will not come to Mahomet, Mahomet must go to the mountain The laboratory workers must go out into the community and there obtain their material for study

Furthermore, there should be a better organization of team work, so that a group of men can attack the problem simultaneously from several directions and correlate their efforts To make such a campaign effective, it is of the utmost importance to attack the epidemic at the earliest possible moment, and for this purpose a plan of preparedness is necessary We are aware of the splendid field work that has been done in recent years by the U S Public Health Service, a few research institutes and by certain progressive municipal health departments Only by great extension of this type of field investigation can we hope finally to determine the cause and discover the means of prevention of the grip epidemics

St Luke's Hospital

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[2] Williams Bull Dept of Health New York February 1916

[3] Moody A M and Capps J A Notes on Grip Epidemic in Chicago The Journal A M A May 27 1916 p 1696

[4] Mathers George The Etiology of the Current Epidemic of Respiratory Infections in Chicago The Journal A M A Jan 1 1916 p 30

[5] Kruse Munchen med Wchnschr 1914 lxi 1547

[6] Foster C B Jr The Etiology of Common Colds The Journal A M A April 15 1916 p 1180

[7] Pfeiffer Ztschr f Hyg 1892 xiii

ACIDOSIS OF GASTRO-INTESTINAL ORIGIN

A PRELIMINARY STUDY BASED ON THIRTY-FOUR CASES *

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AND
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During the summer of 1913, our attention was particularly called to a class of cases which we have since rather loosely classified as intestinal intoxication or acidosis Previous to this time we had occasionally noted acetone and diacetic acid in the urine of children sick with diarrhea, but had not realized their frequency or the gravity of the situation When we began to look for these cases we found that they were fairly frequent, especially during the summer months, and that many cases which clinically belonged to this group did not reveal an abnormal amount of acetone or diacetic acid in the urine

Perhaps the most prominent clinical feature presented by these cases was the severity of the illness, which often was seemingly out of all proportion to the amount of fever and diarrhea The skin quickly lost its tone, there was pallor and an ashen gray color of the skin without cyanosis, the eyes became sunken, and the child was at first restless, then stuporous and finally lay in a coma Often a specimen of urine was obtained with a great deal of difficulty even with a catheter, there apparently being a lack of urinary secretion The progress of the illness was uneventful, ending as a rule in death within a few hours The tongue was apt to be coated, but red at the tip and along the edges With some exceptions the fever was not high, the range averaging from 100 to 101 F, with an occasional excursion to 102 or 103, and a rather frequent antemortem rise to 104 or more If the patient came to the hospital early in the illness, vomiting was often marked, but later as the child became more and more stuporous, it usually became less and in the terminal stages almost ceased The number of stools in the twenty-four hours was subject to great variation Perhaps the most typical finding was a few foul smelling stools, or a history of many stools both during and preceding the onset of acidosis It was not long before we noted that the most constant and perhaps the most nearly pathognomonic symptom of acidosis was alteration in the respiration The costal and abdominal type of respiration took the place of the usual abdominal type The amplitude of the respiration was greatly increased and was accomplished with a distinct effort A modified Cheyne-Stokes type of respiration was occasionally present, but in general the excursion of the thorax and abdomen was nearly the same in each succeeding respiration Eventually the respiration became feebler with only an occasional deep gasp, and finally ceased altogether, as if the respiratory center was exhausted by the exertion it had undergone There was never any evidence of obstruction, and there was no cyanosis

So far as we can discover, Czerny[1] was the first to call attention to the resemblance of the respiration of infants dying of this type of gastro-enteritis and that of rabbits poisoned with mineral acids

In seeking an explanation for this phenomenon, Czerny and Keller found indications of an abnormal amount of acids in the body Their chief proof of this condition was found in the abnormally high ammonia nitrogen, which, instead of being the normal 10 per cent, increased from 40 to 50 per cent of the total nitrogen[2] Langstein and Meyer[3] considered that this increase in ammonia coefficient was not due to abnormal unburned acids, but to several other factors, chief of which were (1) the loss of alkalies through the feces, whereby there was an insufficient amount of basic alkalies in the urine to neutralize the acids, so that ammonia as a neutralizing agent was increased and (2) in the presence of intoxication in the course of inanition there was a rapid increase in the production of organic acids (acetic and oxybutyric), as a result of the disturbance of the nourishment of the infant They were undecided as to whether in those cases of intoxication accompanied by glycosuria there was a disturbance of carbohydrate metabolism which was analogous to that occurring in diabetes which leads to an acidosis On the whole, they refuse to commit themselves as to the seriousness of the condition of acidosis, and seem rather inclined to regard it as an expression of a condition and not of itself as a cause and effect

Steinitz,[4] in an examination of the stools of infants on a high fat diet, especially if there was a diarrhea with loss of weight, found an excessive loss of sodium and to a less extent of phosphates, so that a negative alkali balance was established, for example, more alkali was lost in the feces than was received in the food Holt, Courtney and Fales[5] confirmed this finding, but also found that there was an increased excretion of chlorids, which tended to establish a balance between alkali and acid loss Clinically it seems doubtful if an acidosis can be explained on these grounds, for, after all, an acidosis is not a common accompaniment of diarrhea, and in fact seems most apt to occur when the diarrhea has been at most of moderate severity

The formation of organic acids as a consequence of disturbance of nutrition is, of course, a matter for consideration Where the disturbance of nutrition is at its worst, the presence of abnormal acids to a pathologic degree is not common It is, however, in this type of case, as malnutrition, that acidosis most frequently occurs It seems probable that a more or less lengthy period of malnutrition predisposes to such an attack It has been suggested that the lower fatty acids, such as formic and butyric acid, which have long been recognized in the pathogenesis of dyspepsia, have a part in acidosis The difference in the amount of these acids in acidosis is greater than in dyspepsia, perhaps on account of the introduction of special acid-forming bacteria, or as the result of the increased activity of the normal flora The difficulty with this explanation is found in the fact that the amount of acid present is insufficient to account for the poisoning which takes place in these cases In diabetes and cyclic vomiting there is often an enormous amount of acetone, diacetic acid and beta-oxybutyric acid without symptoms of acidosis

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* Read before the Section on Diseases of Children at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

[1] Czerny Jahrb f Kinderh 1897 xlv 271

[2] Czerny and Keller Jahrb f Kinderh 1897 xlv 274

[3] Langstein and Meyer Sauglingsernahrung und Stoffwechsel p 291

[4] Steinitz Jahrb f Kinderh, 1903, lvii 689

[5] Holt L E Courtney A M and Fales H L The Chemical Composition of Diarrheal as Compared with Normal Stools in Infants Am Jour Dis Child March 1915 p 213

It seems more probable that the explanation of acidosis is found in a damage to the epithelium of the intestinal tract either by acids or bacterial products It has long been recognized that the epithelium of the intestinal wall holds back many different substances, and that when this epithelium is damaged it becomes permeable for toxic materials Lactose and the salts of milk, for instance, under these conditions may easily pass into the blood in so great a concentration as to act as poisons to the body cells The increased concentration of salts causes a withdrawal of water from the cells, with the consequent water hunger which is so prominent a symptom of acidosis The loss of alkali into the intestines may be due in part to a demand for neutralization of acids in the intestinal tract, but much more to the abnormal conditions of intestinal secretions The nitrogen loss may be due to the breaking down of the body cells, or it may be considered as a symptom of a toxic splitting of albumin *As a result of the alkali withdrawal, the water hunger* and loss of weight come to have a meaning, and furthermore it is easily understood that this extensive withdrawal of water from the body tissues may lead to a permanent damage of the ability to fix water by the organism Here we find our explanation for the malnutrition and atrophy which so often follow an attack of acidosis

Recently Howland and Marriott[6] have sought an explanation for acidosis in the retention of acids which are the product of metabolism They point to the low urinary output in support of their contention, and suggest that there may be a loss of the acid excretory function of the kidney It has long been recognized that in acidosis there is an enormous increase in the actual water content of the feces, so that the amount excreted respectively in the feces and through the kidney under normal conditions is nearly exactly the reverse of that in cases of acidosis This is almost certainly the explanation of the rather small amount of urine passed, for water that leaves the body by way of the bowel will naturally be subtracted from that which is excreted through the kidney Furthermore, a damage to the kidney sufficient to interfere with its acid excretory function should almost certainly manifest itself in other ways Occasionally, but not regularly, there are albuminuria and casts Examinations in a very limited number of cases have shown a blood urea, uric acid and creatinin which are within the normal limits for these substances Finally, there is the very natural question to be answered as to how this damage to the kidney has taken place If there is a retention of acid phosphates in the body in these cases, it is not enough to prove merely that it is present in excess, for that shows only a derangement of the normal mechanism by which the body normally takes care of the acids formed as the result of processes of metabolism It does not in any manner suggest the cause of the derangement, and that, after all, is the important thing if we are to exercise any powers of prevention

As Sellards[7] has pointed out, the food supply yields a limited amount of bases, but the acid-forming substances usually preponderate, the proteins yielding considerable acid on account of their content of sulphur and phosphorus Furthermore, it must not be forgotten that the body is constantly elaborating acids as the result of the oxidation processes in intermediary metabolism Certain organic acids are formed in the body in small amounts, to be changed as a rule into carbon dioxid and water, although small amounts of uric acid and lactic acid leave the body unchanged Veeder and Johnston,[8] in a study of twenty-one normal children, always found ketones and betahydroxybutyric acid in children whose caloric requirements were fully covered by the diet To guard against the harmful effects of these and other acids, the body has a most efficient mechanism The maintenance of the normality of tissue reaction is largely dependent on the blood stream It carries bases to the tissues to replace those used in neutralizing acid, and it is the medium by which acid products of cellular activity are removed from the cell Hence it is seen that within certain narrow limits an acidity of the blood and tissues may be a normal condition, and it may be quite impossible to say at just what point it becomes pathologic There comes a time when it is unmistakable, and it may *increase until it of itself is a menace to life*

From the standpoint of both diagnosis and treatment it becomes important to have a method or methods of determining the presence or absence of an acidosis at the earliest possible moment Sellards[9] removed the proteins of the serum with absolute alcohol and evaporated the filtrate with a few drops of phenolphthalein Under normal conditions a deep purple results, but in acidosis the color is greatly modified or may be entirely absent Carbon dioxid determinations will give a very accurate measure of the presence or absence of acids An increased acidity of the blood stimulates the respiratory center to an increased activity in order that there may be a reduction in carbon dioxid, for the hydrogen ion concentration of the blood must be kept at a normal level In other words, a rise in volatile acids is compensated for by a decreased carbon dioxid tension in the blood The carbon dioxid tension of the air in the alveoli of the lungs will be the same as that in the blood Howland and Marriott[6] have very fully described this method as a means of diagnosing acidosis in children More recently Van Slyke has elaborated a method of determining the carbon dioxid tension of the blood It is the method which we have recently been using Of our thirty-four cases the carbon dioxid blood tension was determined twelve times by the Van Slyke method Up to the present time our results seem fairly to parallel those obtained by Howland in his determination of alveolar air carbon dioxid tension The Van Slyke method seems to us to be more accurate, and hence more scientific, but we doubt whether clinically it has any advantages over the method described by Howland There is, besides, the ever present difficulty of obtaining a sufficiently large amount of blood from infants and small children, though by using the jugular vein or the median sinus we have not found this to be an insurmountable difficulty

That acidosis is a condition seems to us to be now a well established fact We have proved methods which enable us to make an earlier diagnosis than was formerly possible, and we are finding that it is of a much more frequent occurrence than we had previously supposed The mechanism by which an acidosis is produced is not entirely clear, but we have seen that it is a very complicated process and probably is the result of many varying factors It has seemed to us that a study of a group of cases might throw some light not only on the cause but also on the best method of treatment

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[6] Howland John and Marriott, W M Acidosis Occurring with Diarrhea Am Jour Dis Child May 1916, p 309

[7] Sellards Bull Johns Hopkins Hosp 1912

[8] Veeder B S and Johnston M R On the Presence of Ketones and Betahydroxybutyric Acid in the Urine of Normal Children, Am Jour Dis Child April 1916 p 291

[9] Sellards Bull Johns Hopkins Hosp 1914 xxv 147

There have been in the babies' wards of the New York Post-Graduate Hospital during the past two years no less than thirty-four cases of acidosis It is probable that we would have a larger number if there had been a carbon dioxid determination of the blood or of the alveolar air in all suspicious cases As it was, the diagnosis depended on the clinical symptoms or on the presence of acetone and diacetic acid in the urine, and to a less extent on the breath In these thirty-four cases, six patients died within a few hours of admission to the wards, almost before a diagnosis could be made, and long before effective treatment could be instituted In all, sixteen patients with acidosis died, or 45 per cent of these thirty-four cases If the six noted above are subtracted, the mortality rate for the remainder is 35 6 per cent Acetone and diacetic acid were found by test twenty-six times Two patients who did not show acetone or diacetic acid in the urine in abnormal amounts had a carbon dioxid blood tension below 40 by the Van Slyke method Of the twelve cases in which the carbon dioxid blood tension was determined, the lowest result obtained was 22 volumes and the average was 28 A rapid increase in the blood carbon dioxid tension followed the use of sodium bicarbonate, the rise often being to the normal figure of 60, or even slightly higher, to 65 With the reappearance of symptoms there was a rapid fall of carbon dioxid tension to 40 or less

An outstanding fact in the study of our cases is the high mortality rate These infants not only die during the attack, but also receive injuries which are often permanent in their effects A very superficial examination of the series serves to emphasize the frequency with which recurrence of symptoms takes place, and will in an unmistakable manner connect the attack of acidosis with the milk

We have seen only one case of acidosis in a child at the breast, and a careful questioning of the mother brought out the fact that there had been a single milk feeding just previous to the attack In this series all of the children at the time of onset of symptoms were on some form of whole milk modification or on a general diet that included milk The feedings without exception were low in fats, generally did not contain an abnormal amount of sugar, and were high, sometimes excessively high, in proteins A hot day and night were almost certainly followed by one or more cases of acidosis, and not infrequently the onset followed an early morning bottle, such as a feeding of, comparatively speaking, old milk It is also to be noted that we have not encountered a case of acidosis in a child who for any reason was on a carbohydrate diet, even though the wards contained a number of such special diets during a period in which acidosis was fairly prevalent

The frequency with which milk that exhibits the biologic activities of an exceptionally large number of bacteria is the cause of acidosis cannot possibly be determined by human experiment and probably not by animal experiments, for the reason that acidosis rarely occurs in children who are well nourished or who have previously had no gastro-intestinal disturbance It is certainly not the bacteria themselves that cause the damage, but is rather the products of their life activity Such products are the result of the breaking down of sugars and fats into acids or the poison split products of the decomposition of proteins Such a decomposition of the milk may take place before it reaches the child, or quite conceivably after it has entered the gastro-intestinal tract Acidosis results when these products are present in large amounts, or when the organism is especially susceptible

In support of our idea that acidosis may result from the split products of proteins, Vaughan in a recent communication has shown that casein yields a large percentage of the protein poison, and that this poison is in and of itself strongly acid In animals, at least, it is entirely capable of causing acute or chronic poisoning when administered by the mouth, in the latter instance resulting in extensive fatty degeneration of the tissues There is a tendency for the protein poison of the casein to combine with certain unbroken proteins so that its physiologic action is diminished and its acidity wholly or in part neutralized It is interesting to note that these poisons which are consequent on the splitting of casein are capable of giving a skin reaction in all persons to whom they are administered We find in the research of Vaughan an interesting support of our theory arrived at from clinical observations that acidosis of gastro-intestinal origin is probably always closely connected with the proteins and especially with the casein of milk We have long believed and, as our observations have become more extensive, this belief has changed to a practical certainty that high protein feeding was not without its dangers and that under certain conditions might become an actual menace to life itself

If the proteins or the products of the breaking down of proteins form the etiologic factor in acidosis recurrences of this condition might naturally be looked for

Recurrences are not only observed so near the first attack as to suggest the probability of a relapse, but are also seen over a period of weeks and months in a form which often suggests recurrent vomiting In private practice we have had three patients who have suffered from cyclic vomiting for more than three years whose initial attack was diagnosed as intestinal intoxication and who we now know suffered from acidosis These children had previously been well and able to care for any kind of food At times the intolerance for milk after such an attack is so great as to suggest an idiosyncrasy or an actual anaphylaxis for milk It would seem that this intolerance for milk is due to the protein rather than to the sugar or fats of the milk There was certainly no apparent advantage in giving sugar or fat free milk Whey was tried on only one occasion, for the result was such as not to be a temptation for further investigation We should hesitate to assert that sugar was a cause of acidosis in view of the fact that of late a regular part of our treatment has been the use of glucose and thick gruels of barley, farina and oatmeal

The suggestion that the etiologic factor of acidosis is to be found in the decomposition of proteins is supported in an interesting manner by the frequent finding of large amounts of indican in the urine Indican was not invariably present, but when found was often in very large amounts We also discovered that commonly it was a rather transient finding, being found on one day and absent or nearly so on the next

Having noted that these children improved rapidly if they lived for a sufficient length of time for a cathartic to act, we were tempted to see what starvation would do It was, however, with a considerable degree of hesitation that we instituted this measure, for we were familiar with the fact that mere starvation could be the cause of a very rapid increase of abnormal acids Perhaps, somewhat contrary to our expectations, we have often noted a remarkably prompt improvement to follow on a period when nothing but water and a solution of sodium bicarbonate was given We have seen the stupor disappear and respirations fall almost to normal over night with this simple treatment We do not consider that this improvement was entirely due to the sodium bicarbonate, for under other conditions of feeding recovery, if it took place at all, was much slower

A very important part of our treatment has been a thorough cleaning out of the bowels and especially of the small intestines High colon irrigations and stomach washing did not accomplish much improvement if our efforts ceased at this point Nearly always such a catharsis resulted in a very nasty, foul smelling stool

The use of sodium bicarbonate is to be recommended as a valuable temporary measure It has much the same relation to acidosis that the cold pack has to temperature It serves to keep the patient alive until other measures which require time become effective It should be pushed until the reaction of the urine is alkaline or the blood shows a normal reaction We have made it a practice to give the sodium bicarbonate in every possible way — by stomach, by the colon, subcutaneously and intravenously — as the urgency of the symptoms seemed to dictate

As we have tentatively connected attacks of acidosis with the milk — and perhaps most frequently with milk which contains an unduly high bacterial count — a very essential part of our treatment has been the elimination of milk from the diet for a considerable period of time Our most successful cases have been those in which we have made a very slow return to the proteins To an extent we have made vegetable proteins take the place of animal proteins, accordingly these children have been given thick gruels which were cooked for many hours With the addition of sugar as the symptoms seem to warrant, the caloric requirements for a time, at least, can be met

The mortality rate among children suffering from an attack of acidosis is so great as to make it a condition which should demand not only our interest but also our earnest investigation into its cause and treatment We have suggested the close relation of acidosis to the milk supply and especially to the decomposition products of the proteins of milk We have outlined a method of treatment which is more satisfactory than any that we have previously employed, and which is based on the assumption of the close relationship of milk and this type of acidosis

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Ocular Reflex of Auditory Origin—The French authorities have designated as the standard of hearing for recruits that they can hear a whisper at 0 5 meter and the speaking voice at 4 meters Simulation of deafness to escape military service is occasionally encountered, and it can be unmasked by the behavior of the eyes when a sudden, unexpected sound strikes the ear from nearby With a sudden start from the loud sound close to the ear the subject winks, and the pupil may contract This brief defensive closure of the eyelids of course does not occur if the subject fails to hear the sound Moline says in his description of the simple technic for the tests (*Revue de laryngologie*, 1916, p 385) that it automatically sifts out the really deaf who might be accused of malingering otherwise

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MYASTHENIA GRAVIS, WITH THYMOMA*

W A JONES, M D

MINNEAPOLIS

The patient whose case history is here given presented himself at the City Hospital in Minneapolis in November, 1915 The first and cursory examination suggested the usual type of bulbar paralysis, but after the patient had been admitted to the permanent ward and studied more carefully, the diagnosis was changed to that of myasthenia gravis

The family history was as follows The mother was living and well at 89, the father died at 60, the cause of death not known, two brothers were living and well, one brother died of pneumonia, there were no sisters, the wife died at 38, cause of death not known, there were two children, both of whom were living and well

The history of the antecedents, so far as the patient was able to remember, revealed no nervous or mental trouble in the family, on either the paternal or the maternal side There was no history similar to the condition from which the patient suffered in any member of the family

The personal history showed that the patient had always been a strong, healthy man, and had never been seriously ill prior to the onset of his present trouble He had the usual exanthemata of childhood, from which he made good recoveries without sequelae Twenty-seven years before he had an attack of malaria, but was able to be about, and was at no time seriously ill He had no other history of illness He had suffered no serious injuries of any kind, and never had been operated on His habits had always been moderate He used very little coffee, no tea, and no alcohol, but had been for some time a heavy user of tobacco, and gave a history of more or less persistent constipation Prior to the attack his appetite had been good, and he had slept well He denied any venereal trouble, nor could any be elicited from laboratory findings He had an inguinal hernia, but it was not troublesome or annoying He had occasional attacks of tonsillitis, and he had hemorrhoids

To the best of the patient's knowledge, he was in perfectly good health three years before About May, 1912, following an exposure to cold while working in water as a ship's carpenter, he noticed within a few days a marked weakness of his neck muscles, and within two weeks he had developed a condition similar to the one from which he suffered when examined The symptoms came on rather slowly, and were associated with slight pain and soreness in the muscles of the shoulder and the back of the neck, followed by a general muscular weakness, and particularly by an inability to close his mouth, to swallow solid foods, or to drink liquids This condition progressed until the patient became very emaciated, and was almost unable to take nourishment at all This illness lasted a few weeks, when he began to improve and recovered his strength, and within six months after the onset of his primary symptoms, he claimed that he was perfectly well, and during the interim he did not recall that he had felt any weakness of muscles or any inability to swallow or to speak

Up to February, 1915, he was in his usual good health and was able to attend to his work During the month of February, 1915, without apparent cause unless it was a slight cold, as he expressed it, following exposure, the above-named symptoms began to return There was pain in the jaw, but not of a severe type Gradually the muscles of the neck and throat became weak, and he was unable to move his jaw or to swallow or drink with his usual ease At the time of his admission into the hospital in November, 1915, he had a slight ptosis of the right eyelid The weakness that he complained of was most marked in his neck muscles but the entire musculature was more or less involved, and during the time that he was under observation he was unable to walk, to make any marked exertion, or to eat a full meal After a good night s rest the patient was very much better, but as the day went on his weakness became more marked At the beginning of a meal swallowing and other movements of the jaw were comparatively free, but after a few moments the muscles tired, and he was unable to take further nourishment It was difficult for him to blow his nose, and he was obliged to have his mouth closed and his chin held in position until he could force air through the nostrils After talking for a few moments he was obliged to hold his lower jaw with the aid of his hand Aside from this general weakness, and particularly of the muscles of the neck and jaw, and his inability to finish his meal, the patient felt fairly comfortable

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* Read before the Section on Nervous and Mental Diseases at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

Neurologic examination seemed to show the mental condition to be normal for a man of his age His speech was rather indistinct and slow, rather characteristic of his muscular weakness

The first cranial nerve was normal The second showed that vision was fair in both eyes and he had normal eyegrounds

The ocular muscles, controlled by the third, fourth, and sixth nerves, were normal, with the exception that the right rectus was somewhat lax He had no double vision and no nystagmus The pupils, however, were irregular and slightly unequal, the right being larger than the left, both reacted sluggishly to light, but were normal for accommodation

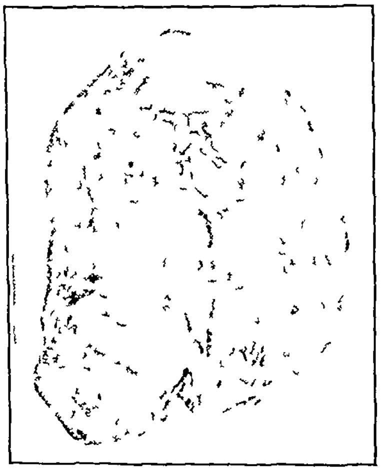

Fig 1 — Photograph natural size of tumor removed at necropsy situated in thymic region surrounded by firm capsule with no perforations

With the exception of a slight ptosis of the right eyelid, and the impairment of the external rectus muscle on the right side, there was nothing further to implicate the third and sixth nerves

There was an apparent atrophy in both masseter muscles and a marked inability to move the lower jaw As a result of this involvement of the fifth nerve the mouth was open most of the time

The seventh nerve presents no irregularities

The eighth nerve showed that there was a moderate amount of deafness in the left side

The tongue and palate were apparently normal There was no facial or tongue tremor, except as was shown by his inability to swallow, and the fact that his speaking voice was below par and any continued effort on his part to talk was accompanied by rapid muscular tire

There was apparently no sensory disturbance to cotton pinpoint deep and superficial muscle sense, or vibration sense

The biceps reflex was present and also the triceps The supinator was active and the patellar, active plus The Achilles and abdominal and cremasteric were not obtained

Coordination as far as was determinable was unimpaired

The blood count was practically normal A laboratory investigation of blood and spinal fluid showed the Wassermann negative The urinary findings were also negative, eliminating any probable disease of the kidneys

During the patient s entire stay at the hospital there was but little change from week to week in his condition At times he felt better and stronger, and was able to move about in bed better at times but there was no evidence of any marked change with the exception of his dyspnea On Dec 10 1915, he complained in the afternoon of a general fulness of his chest an evident dyspnea A hypodermic of 1/200 grain of atropin was given, with the hope that it might relieve his distress Ten minutes after the hypodermic was given he died suddenly

A necropsy was made on Dec 11, 1915, twenty-four hours after death the report of which is as follows

The body is well developed and fairly well nourished, pupils, 5 mm in diameter and equal, no edema no special marks

The peritoneal cavity contains no excess fluid and no adhesions Intestinal surfaces are smooth and glistening Appendix is 8 cm in length and free Diaphragm extends to the fifth rib on either side Mesenteric lymph nodes are firm and slightly enlarged

There are no adhesions and no excess fluid in the pleural cavities

The pericardial cavity contains about 3 c c of thin, clear fluid

The heart weighs 275 gm The epicardium is smooth and clear The mitral valve shows a slight diffuse thickening There are no lesions in the other valves The endocardium is smooth and clear The muscle is pale and firm The root of the aorta shows no lesions

The left lung shows a firm, whitish thickening of the pleura at the apex, thickness, about 6 mm dimensions of area, 2 by 1 cm The lungs crepitate throughout They are very deeply colored with black pigment Throughout the lungs is a considerable number of small miliary nodules of firm consistence In the apexes the miliary nodules show firm fibrous tissue of a black color The cut surfaces of the lungs are fairly dry The right lung weighs 375 gm left 362 gm There is an old healed apical tuberculosis of the lungs, old healed miliary tuberculosis of lungs

The spleen weighs 130 gm The capsule is wrinkled and slightly thickened The pulp is fairly firm The cut surface shows prominent lymph nodes

The liver weighs 1,300 gm The capsule is smooth and glistening One small miliary nodule is noted on the anterior surface, resembling in structure those described in the lung The cut surface shows no special markings Lymphorrhages are numerous in the liver, and a few were found in the suprarenals

The pancreas, gastro-intestinal tract and suprarenals show no gross lesions

The left kidney weighs 108 gm , the right, 112 gm They are of a dark red color The capsules strip readily, exposing smooth surfaces The cortices are about 7 mm in thickness and of a dark red color

The bladder and genitalia show no pathologic condition

The aorta is fairly elastic A few very small, elevated yellowish areas are noted

A tumor is found in the thymic region, just above the heart and immediately behind the sternum It is embedded in loose connective tissue, and is not adherent to the sternum or to any of the thoracic viscera Microscopic examination of the adipose tissue surrounding the tumor shows the usual senile thymic tissue The tumor is easily shelled out of the connective tissue envelope It weighs 60 gm , is 6 cm long, 3 5 cm deep anteroposteriorly and about 4 cm in transverse direction It is completely enclosed in a strong fibrous capsule about 0 5 mm thick, which is not perforated at any point The cut surface is of soft consistence somewhat softer than the thymus of a child, and is studded with hemorrhagic areas The cut surface is of a light gray color except in the portions containing blood No lobules can be seen (Compare Figures 1 and 2)

Microscopically the tumor is seen to consist of fetal thymic tissue, that is, it shows epithelial cells in solid masses or arranged in a network among which there are varying numbers of small lymphocytes The tissue corresponds to the fetal thymus at the stage when the epithelial organ is transformed into a lymphoid organ No Hassall's corpuscles are present

No lesions are found in the tissues of the scalp The dura mater readily separates from the calvarium The sinuses of the dura show no lesions The subarachnoid contains a considerable amount of clear fluid in its dependent portions The arteries of the brain are soft The ventricles of the brain are not dilated and appear normal A central coronal section through the brain shows no lesion

The lumbar and thoracic part of the cervical spinal cord are removed The meninges show no lesions Sections of the cord show no gross lesions, except a possible softening in the anterior horns of the cervical cord

The muscles examined were a few pieces from the sternothyroid and sternohyoid These did not show lymphorrhages

Of fifty-six necropsies on cases of myasthenia gravis that have been recorded since 1901, seventeen showed hyperplasia or persistence of thymus, and ten of the fifty-six cases showed a thymic tumor This gives a thymic involvement in nearly half of the cases All the thymic tumors except one have been of the benign type, somewhat similar to the case reported The authorities seem to be very general in their statements that these tumors are special forms of hyperplasia, and not true neoplasms, and therefore can best be designated as benign thymomas

The literature on the thymus gland is neither convincing nor satisfying The fact seems to be generally accepted that the thymus and the thyroid are interrelated, particularly from a circulatory point of view The assumption is quite clear, too, that the thyroid is responsible for disturbances of bodily metabolism, and it seems reasonably safe to assume that the thymus is in some way responsible for like conditions Some investigators believe that the thymus and the lymphatic system are coordinated in function, and that the thymus itself is probably concerned in the production of lymphocytes It is further probable that the thymus has some correlated effect with other ductless glands, and, like other glands, the thymus may be the primary seat of the attack This does not necessarily mean that the thymus itself is an independent organ, but that it has its influence in the ductless gland chemistry, and certain persons have disorders and hyperplasias or diseases of the thymus, while in others the same conditions cause disturbance of other glands, as the thyroid or the suprarenals One can only theorize on the whole situation concerning the dependence of the thyroid, thymus, and suprarenals, one on the other The condition which we look on as status lymphaticus is something that we know very little about We are led to believe from various sources that this condition may cause death under certain surroundings or circumstances The same applies to the thymus, that there may be a status thymaticus or, as has been more aptly expressed, a status thymicolymphaticus Some investigators do make a definite distinction between status thymicus, status lymphaticus, and status thymicolymphaticus, but this distinction can be demonstrated only after death The group of symptoms which occur before death is not very readily differentiated

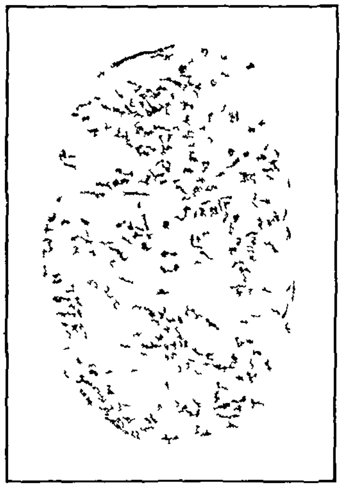

Fig 2 —Cut surface of tumor shown in Figure 1 No lobulation numerous hemorrhagic areas plainly visible

The presence of a thymus in a person of middle life, particularly when associated with an exophthalmic goiter, is a very strong index that the thymus is the main disturbing element, and not infrequently the operator who removes the thyroid gland without recognizing the presence of a thymus hyperplasia produces a change in the circulation of the thymus which, not infrequently, is accompanied by sudden death There is every reason to suppose, therefore, that sudden deaths in these cases of myasthenia gravis in which the enlarged thymus is present may occur, as in the case earlier recorded in this paper, and the death be a thymic death

The relationship between thymic disease and the central nervous system has never been established, unless it be that certain types of people who have inherent tendencies or inherent defects may be subjects of hyperplasias of the thymus, as well as other organs, and this, in turn, may have produced a change in the blood stream of the brain stem, either from indirect pressure or from substances thrown into the circulation which affect the respiratory or circulatory centers The majority of thymic deaths in young people and children are probably due to pressure effects, yet this does not eliminate the probability of toxins in the blood stream, as well as pressure from overgrowth This theory is based on the experiments of a few of the observers who have found nerve lesions, particularly in the gray cells, in people who have thymoma

ABSTRACT OF DISCUSSION

Dr Walter B Swift, Boston It has been held by Brown of Brooklyn that thymus enlargement is an etiologic factor in stammering I should like to ask Dr Jones if any of the cases he knows about have stammering connected with this lesion

Dr R Foster Kennedy, New York In my first two years at the National Hospital I did not see any case of myasthenia gravis Later we had nine cases inside of eighteen months Seven of these patients died, we succeeded in getting six postmortem examinations Of the six cases five had thymic persistence In practically all of these the thymus was as large as my hand and was as thin as tissue paper, comprising a thin sheet of glandular tissue which spread down over the whole of the upper part of the pericardium While it was not clear to us a half dozen years or so ago what the connection between the clinical disease and these extraordinary pathologic findings might be, it did occur to our dull intelligence that it was more than a coincidence, that there must be here some relation between cause and effect I have seen only one case of myasthenia gravis in a woman over 25 They were nearly all young women, the men patients were always in middle life Sir William Gowers published a group of cases of three men as I remember, which he calls pseudomyasthenia gravis, as a result of gasoline poisoning, or as he called it, petrol poisoning

Dr C Eugene Riggs, St Paul I have under my care at the present time a case of myasthenia gravis in a woman who is over 25 and under 30

Dr George A Moleen, Denver A case came under my observation as a dysentery and in Colorado when we find dysenteries, emaciation and marked prostration one of the first assumptions is "tuberculosis" On inquiry it was learned that it was not lung trouble for which this patient came West, but a muscular weakness He had been examined in Chicago by a very good man some twenty-four years before and the condition was then pronounced a progressive muscular atrophy, six years later it was called myasthenia gravis The myasthenia was evident and it occurred in epochs The acute attacks occurred in periods of two or two and one half years, with all the bulbar and ocular symptoms, then he would gradually recover, gaining in strength But since the last two or three attacks prior to observation he had not recovered completely Examination revealed tenderness under the right lower costal margin at that time, and very fortunately segregation of the urine revealed pus coming from the right kidney Exploratory operation revealed a large perinephritic abscess which compressed the right suprarenal against the lower surface of the liver on that side Evacuation and drainage of that caused prompt return of his power I followed the case for about six months after that, when he returned to Kansas, and took up his occupation The case was distinctly myasthenic in type, and at that time was reported as a case of Addison's disease from a perinephritic abscess

Dr William A Jones, Minneapolis In the literature on myasthenia gravis I found nothing relating to speech defects, particularly stammering I have seen but few cases of what I believed were true myasthenia gravis, and the two or three I have in mind at the present time have manifested no marked change, and are still living fairly comfortable lives The tumor in the case I reported was about the size of a large Damask plum and naturally occupied a considerable space in the mediastinal region

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EXPERIMENTAL STUDIES OF INJECTION OF THE GASSERIAN GANGLION

CONTROLLED BY FLUOROSCOPY *

LEWIS J POLLOCK, M D
AND
HOLLIS E POTTER, M D
CHICAGO

A perusal of the contemporaneous literature leads to the conclusion that gasserian ganglion operations and intraneural or intraganglionic injections of alcohol are the procedures of selection for the treatment of trifacial neuralgia

The technical difficulties of operations on the gasserian ganglion or its sensory root and the relatively high mortality attending such operations, except in the hands of a very few surgeons, made welcome a procedure which offered at least alleviation without danger, disagreeable sequelae or great difficulty

The injection of pain deadening and nerve destroying substances into the trifacial nerve dates back to 1874, when Bartholow reported successes with the injection of chloroform Successful results with the injection of osmic acid were recorded through a period of years following Billroth and Neuber in 1884, by Eulenberg, Shapiro, Bennet, Murphy, Wright and others

It was not until Schlosser reported the results of his experiments in 1903 that persistent efforts were inspired for the development of a technic for successful alcoholization of the fifth nerve About the same time further impetus was given by the work of Ostwald, Levy and Baudoin The technic of the latter two was adopted by Patrick, Hecht, Sicard, Harris and others The development of the technic and the reports of its successful employment by these workers has placed this procedure permanently among the methods employed for the effective relief of trifacial neuralgia

It is not within the scope of this paper, which deals with a technical problem, to describe the details of the development of methods of injection and their results Suffice it to say that in the hands of operators who have had wide experience and who have developed consummate skill, all these methods are uncertain As Patrick[1] says, "It requires little experience or reflection to realize that no one can uniformly touch with a needle a given point 4 to 5 cm (2 inches) below the surface"

The uncertainty of prevailing methods led us to pursue some experimental work on which this paper is based We are concerned with reaching the gasserian ganglion through the foramen ovale Part of the experiments deal with a route which Harris uses in his technic He, with Patrick and others, employs with little modification the course adopted by Levy and Baudoin The needle is inserted in the sigmoid notch from 1 5 to 2 5 cm anterior to the anterior root of the zygoma or from a point immediately in front of the preglenoid tubercle, to one a centimeter farther forward The needle is directed somewhat backward and slightly forward, and at 4 cm should reach the nerve The needle arrives at the foramen ovale after having passed through the skin, subcutaneous tissue, the zygomatic insertion of the masseter, posterior portion of the temporal tendon, superior border of the external pyterygoid muscle and lastly in the front of the temporo-maxillary articulation Patrick[2] has called attention to the fact that

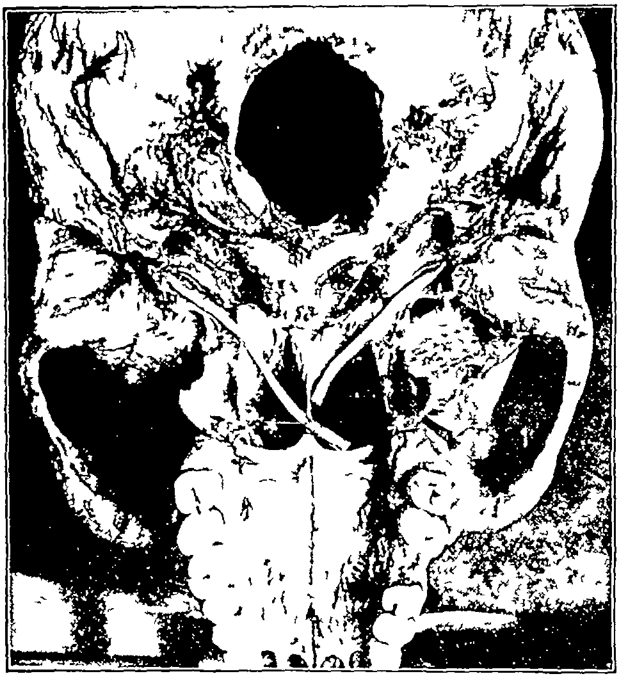

Fig 1—Lead strips in the groove of the eustachian tube, showing the foramen ovale immediately external and anterior to it

> A really valuable landmark is the external pterygoid plate The foramen ovale, at least in the vast majority of cases, is directly back of this and at about the same depth Hence I aim to strike this plate close to its posterior edge and then work backward until the needle slips by it Then I have every reason to believe that the point of the needle is just in front of the nerve and at about the proper depth

Patrick gives a very valuable guide to be used in determining the approximate depth of the foramen from the surface Analysis of his measurements in eighty cases indicates the following When the interzygomatic diameter is 5 inches, the nerve will be found at 4 to 4 25 cm When the interzygomatic is 5½ inches, the nerve is apt to be at over 4 5 cm

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* Read before the Section on Nervous and Mental Diseases at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

[1] Patrick Hugh T The Treatment of Trifacial Neuralgia by Means of Deep Injections of Alcohol The Journal A M A Nov 9 1907 p 1567

[2] Patrick Hugh T The Technic and Results of Deep Injections of Alcohol for Trifacial Neuralgia The Journal A M A Jan 20 1912 p 155

If one follows these various details of procedure, the needle may be inserted to a place in very close proximity to the foramen, and we are concerned with making this proximity as great as possible

A study of the anatomy of the parts about the foramen ovale shows that along the line of the sphenopetrosal fissure the edges of the adjacent sphenoid and petrous-temporal bones are beveled "so as to form a groove which extends from the root of the inner pterygoid internally, to the inner side of the base of the alar spine externally in the groove is lodged the cartilaginous part of the eustachian tube Between the root of the external pterygoid plate and the alar spine there are two foramina which lie directly in front of the sulcus of the eustachian tube Of these the larger and anterior is the foramen ovale" (*Cunningham*)

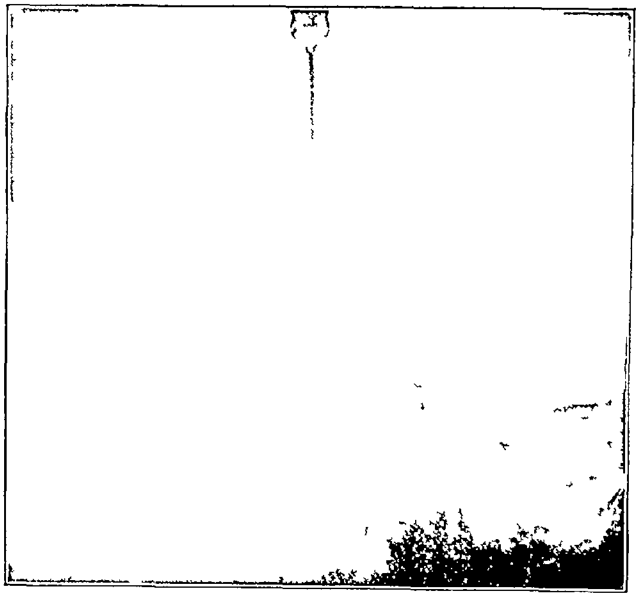

Fig 2—Needle in foramen ovale and eustachian bougie in position The needle can be seen entering the foramen on the linear shadow cast by the structure through the inferior border of the great wing of the sphenoid

A view of a sagittal section of the skull at the plane of the foramen ovale shows that it is directly in front of, above and internal to the eustachian tube A study of both sides of fourteen skulls showed that however the groove for the eustachian tube varied in its course, the bone separating the sulcus from the foramen varied in thickness but from 1 to 3 mm

It follows that to successfully introduce a needle into the foramen ovale it is necessary only to visualize the eustachian tube and to establish certain angles and lines which would by means of the fluoroscope enable one to determine when the point of the needle is in front, above and external to the eustachian tube at a proper depth

The visualization of the direction and approximate location of the eustachian tube is easily accomplished by the introduction of a eustachian catheter with the assistance of a nasopharyngoscope (so that one is certain of having entered the ostium), and by inserting through the catheter a bougie made of fuse lead or one made of flexible spirally wound gold wire This, when it is inserted to a depth of about 1 inch beyond the end of the catheter, is about at the beginning of the isthmus of the tube at its entrance into the osseous canal The course and position of the tube can now readily seen by means of the fluoroscope (Fig 2)

The rays should enter the head at the opposite occipitoparietal protuberance at an angle of 120 degrees to a coronal section, and at an angle of 45 degrees to a sagittal section of the head Under these conditions, a needle introduced at the sigmoid notch and taking a direction approximately at an angle of 20 degrees to the sagittal suture and 130 degrees to the coronal section would be directed toward the foramen ovale and be projected on the screen as traveling downward toward the eustachian tube, at an angle of 90 degrees from the point of entrance

If the needle is introduced in this direction to a depth determined by computation from the intertubercular diameter, and does not cross the shadow thrown by the eustachian bougie, it is at its proper depth

If the rays now be shifted so that they enter in the direction of the needle, the butt of the needle should appear above the eustachian tube, determining its proper height This leaves undetermined the anteroposterior location of the foramen The bony structure seen through the inferior border of the zygomatic surface of the great wing of the sphenoid throws a shadow running anteroposteriorly and upward and when visible, the foramen ovale may be found somewhere along its course

An approximate formula may be formed If under the above conditions a needle be introduced to a point above the eustachian tube, and to a depth not crossing it, it can be caused to enter the foramen ovale by directing it at points along the described line from before backward When this line is not visible, the needle may be directed from 0 5 to 1 cm above the shadow of the eustachian bougie

A large number of factors entering into the optical physics of the formation of the shadow of the eustachian bougie make the distance between the shadows of the eustachian bougie and foramen ovale vary to such a degree that the actual distance cannot be computed

On cadaver heads this method offers such assistance that a needle can be successfully introduced into the ganglion on each attempt When, however, we are dealing with live subjects, a new factor is introduced which for the time precludes the possibility of the employment of this method We attempted this method in three cases and found that the secondary rays developed in the tissues, principally the brain, diffusing the shadow of the slender needle to such an extent that proper methods of diaphragming must first be developed that will eliminate these rays before the fluoroscopic projection of the eustachian tube may be employed as a means of accurately locating the foramen ovale

Failing in this direction, we began to study another route

Hartel[3] has given us a route which has made the approach through the foramen ovale more practical and useful To Grinker,[4] who first made Hartel's method known to American readers, we are indebted for some of the following description The needle is introduced through the cheek opposite the alveolar process of the second upper molar tooth. It is guided by means of a finger in the mouth so as to pass between the anterior ramus of the lower jaw and tuberosity of the superior maxilla. "Causing the needle to sweep around the buccinator muscle, the operator pushes it onward between this muscle and the masseter, coronoid process of the lower maxilla and the temporal muscle externally, into the zygomatic fossa. Continuing in the direction upward, backward and slightly inward, the needle now reaches the broad under surface of the great wing of the sphenoid, having pierced the external pterygoid muscle, which fills the zygomatic fossa."

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[3] Hartel F Arch f klin Chir c No 1

[4] Grinker Julius A New Method of Treating Neuralgia of the Trigeminus by the Injection of Alcohol into the Gasserian Ganglion The Journal A M A May 3 1913 p 1354

According to Hartel, the needle points to the pupil of the eye of the same side and on lateral view the needle points to the articular eminence on the zygoma. The needle engages the foramen ovale at a depth of about 6 cm. from the point of entrance.

Maes[5] has found that the foramen was more accessible from a point behind the last molar tooth of the lower jaw than from the point given by Hartel. From a study of forty skulls we found that projecting a pin through the foramen ovale hugging the anterior border of the petrous portion of the temporal bone, the point of entrance would fall in most instances at a point between the second and third molars of the upper jaw.

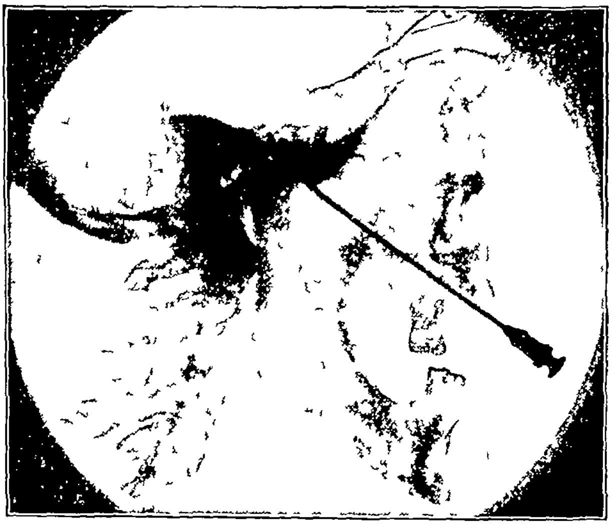

Fig. 3.—Needle inserted through the foramen resting on the anterior border of the petrous portion of the temporal bone.

The depth to which the needle should be introduced may be more accurately estimated by using the data we have derived from an examination of both sides of forty skulls. The distance from the point of entrance of the needle to the preglenoid tubercle, or the alveolar tubercular measurement, was greater than the distance from the point of entrance to the foramen ovale or alveolar foraminal measurement in all but two instances. Of these, one was an anomalous skull, and the other, one in which the intertubercular measurement exceeded 5½ inches. In all other skulls it was found that the alveolar foraminal was less than the alveolar tubercular measurement by from 0.1 to 0.9 cm. Eighty per cent. of the cases showed a difference of less than 0.6 cm., 50 per cent. less than 0.4 cm. Of the cases showing a difference of over 0.6, many occurred where the intertubercular diameter was less than 5 cm., and some where the alveolar tubercular measurement exceeded 5.5 cm. The depth of the foramen from the zygoma did not bear a constant relation to the alveolar foraminal measurement, except in that where the foramen was deeply situated the alveolar foraminal measurement was often inclined to be greater than usual.

The anterior border of the petrous portion of the temporal bone, when the head is viewed exactly laterally through the fluoroscope, throws a shadow easily seen in living subjects. This shadow forms a line which is a direct projection of the shadow cast by a needle entering a point between the second and third molars of the upper jaw. If, therefore, a needle be introduced here and pushed, according to Hartel's directions, to a depth computed by our measurements, it will be approximately at the foramen ovale. If now the needle be directed so that a projection of the shadow would follow the shadow of the anterior border of the petrous portion of the temporal bone, or 1 or 2 mm. below it, the anteroposterior and superior planes of the foramen ovale will be accurately located. The internal and external planes of the foramen ovale cannot be located by the fluoroscope, and one is guided by Hartel's direction to point at the pupil of the same eye and by the pterygoid bone. The superior inferior plane may be further determined, if necessary, by employing a shadow of an opaque eustachian bougie, when the needle should be above it, and here the secondary rays do not interfere with the visibility of the shadow of the needle.

In our experiments, employing both sides of the fourteen heads, no difficulty was experienced in introducing the needle into the foramen ovale on each attempt. It might be said that the introduction of a needle into a given point of a cadaver which cannot bleed, suffer pain or experience injuries of various important structures, is quite a different matter from accomplishing the same result in the living subject.

We have had only one opportunity of using this method on a living subject. Here the lower and middle branches of the ganglion were easily reached and injected, with immediate relief of pain and good analgesia.

In conclusion we may say that employing the shadow cast by the anterior border of the petrous portion of the temporal bone, on a fluoroscope, as a line of orientation injection of the gasserian ganglion by Hartel's method is made more certain.

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ABSTRACT OF DISCUSSION

Dr. Hugh T. Patrick, Chicago: It remains to be seen whether Dr. Pollock's method will prove to be a practical one to be used in the majority of these cases. The method of Hartel, under proper guidance perhaps according to the method which Dr. Pollock has devised, may prove to be an entirely practical and practicable procedure, but I must say that under the rules which Hartel himself originated I never had the courage to attempt to inject the gasserian ganglion. I may exaggerate the dangers a great deal but I do not really want to demonstrate to myself that it is a dangerous procedure. The operation has, of course, been done successfully a number of times, and I hope under the scientific guidance of Dr. Pollock we may be able to do this accurately and without danger. And this is a consummation devoutly to be wished. Injection of the ganglion by the Harris method is disappointing to me. I have tried it a number of times; occasionally the needle goes through the foramen ovale and

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5. Maes: Urban Surg. Gynec. and Obst., 1915, xxi, 449.

reaches the gasserian ganglion or its vicinity with a facility comparable to putting one s hand in one s pocket And the next time the needle does not find the foramen at all

Dr. Julius Grinker, Chicago While in Berlin in 1902-1903 I saw Hartel demonstrate his method, which was new then I also saw the cases as he demonstrated them before the Berlin Surgical Society There were five patients, each one having been afflicted with a very formidable sort of tic douloureux and each one having received a number of peripheral nerve injections without benefit Relief came promptly after Härtel's injections The first injections were made, not to relieve neuralgia, but to anesthetize the face for operation For this purpose Hartel uses small doses of novocain introduced into the gasserian ganglion, which permit operation on any part of the face without a general anesthetic It was the ease with which he succeeded in anesthetizing the face that led him to adopt the injection of alcohol directly into the ganglion as a means of giving relief for trigeminal neuralgia My own impression of the method is that it is not more difficult than injection by the Boudouin-Levy method with which Dr Patrick made us acquainted When first shown to me, I thought it a rather formidable procedure — to take a needle of such large caliber and bore a hole in the patient's face Nevertheless we tried it and succeeded in giving relief to many unfortunate sufferers Hartel uses a very fine needle so fine, indeed, that it matters little whether you introduce it twenty times or only once It does no damage if you follow his directions Nevertheless, I believe a simplified method would be a great advantage Personally I do not so much fear the difficulty of getting into the ganglion, as the consequences of having entered the ganglion, namely the corneal ulceration As a successful gasserectomy done by the surgeon is in many instances followed by ulceration of the cornea, so do we get a similar result after successful injection of the ganglion And it is this apprehension which has really prevented me from repeating the injection more than twice In short, I fear the aftereffects of a successful injection much more than the difficulty of getting into the foramen

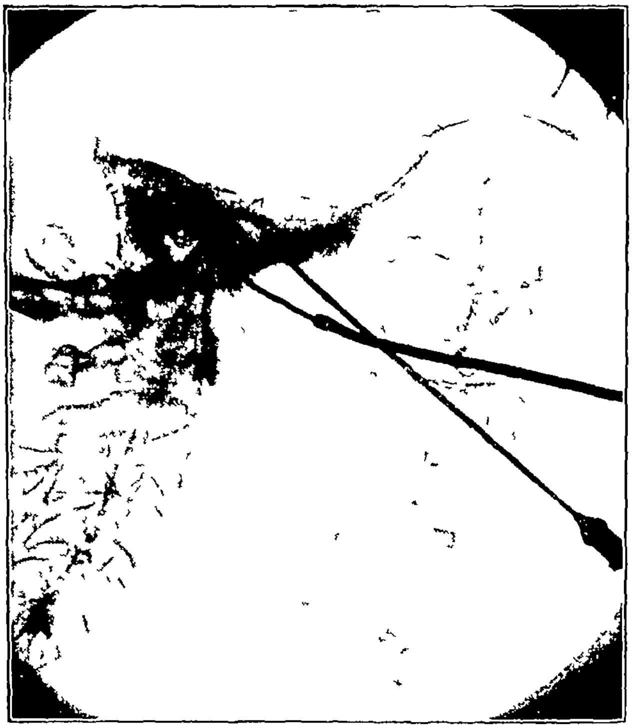

Fig 4—Needle in the foramen ovale the eustachian bougie in place to indicate the proper height

Dr M A Bliss, St Louis I have felt that the injection of alcohol was a more or less temporary measure The cells of the ganglion are much more resistant to alcohol than are the fibers of the trunk, according to the observations I have seen quoted I would like to ask whether in any successful injection of the gasserian ganglion the anesthesia and the relief from pain is reasonably permanent

Dr Charles R Ball, St Paul For about eight years I have been making these injections by the Boudouin-Levy method which Dr Patrick first brought to this country Injection of the ganglion is no trivial procedure The procedure is to be entered on with a proper sense of appreciation of the danger connected with it In the first place we must have the right sort of a needle I sent to Berlin and procured Härtel's injection outfit, since then I have been using the Hartel needle in all my injections It has the disadvantage that after you start your direction, the needle is so fine that you cannot change it, therefore if you do not enter the foramen you have to withdraw the needle and start over again Another objection to the fine needle is that a little bit of blood is liable to cause it to become occluded, particularly if you have squeezed a few drops of alcohol through the end of the needle Alcohol coagulates blood very readily, and it is most distressing sometimes to find that you are in the correct position, but that the needle is occluded

In getting into the gland I have had the experience related by Dr Patrick When I heard Dr Harris describe his method it seemed good, so I practiced on a cadaver and found no difficulty in entering the foramen ovale from the side according to the Harris method, also no difficulty in entering the foramen ovale from the front according to the Hartel method But I noticed that many times when I went into the foramen of a living subject this did not mean that I had got into the ganglion by any means, but that the end of the needle was under some dense tissue, and this tissue prevented me from injecting the ganglion with alcohol

The best ganglion injection I ever made was an accidental one I was trying to inject the third branch of the nerve according to the Levy-Boudouin method I introduced the needle to the point where I thought the exit of the third branch ought to be and injected about 1 c c of a 90 per cent solution of alcohol The patient immediately went into collapse, became unconscious, had paralysis on that side of the face, and I thought she was going to die on the table She was over 80 years old The facial paralysis was the most complete I ever saw, but this did not bother her a bit, we had a beautiful anesthesia of the three branches of the fifth nerve and she was highly pleased and delighted with the results Last winter I had one of the most intractable cases that I have ever encountered I am sure that I entered his foramen ovale according to the Hartel method on two different occasions and injected alcohol On one occasion I got facial paralysis and nystagmus, anesthesia of all the branches of the fifth, and temporary anesthesia of the cornea, and yet, with the exception of the partial anesthesia of the cornea, the pain still continued

Dr Ernest Sachs, St Louis Dr Ball is frank enough to tell us of the untoward accidents I should certainly hesitate to undertake any procedure when I had such complications I judge that what happened in Dr Ball s case was that when the alcohol was put into the cavum meckeli it went where the cerebrospinal fluid goes, when you open the cavum meckeli you always get discharge of cerebrospinal fluid I have had no experience with injection of the ganglion, I would not think of doing it or trying it Gasserectomy, when carefully done, is not the dangerous operation that it is generally supposed to be About a month ago Dr Harvey Cushing reported about 150 gasserectomies without a single death, no complications except one or two corneal ulcers which healed, and no blindness It would seem to me that results of that sort are far better than doing an operation which is absolutely in the dark and very dangerous

Dr George Morris Dorrance, Philadelphia In cases of operation on the face, we inject the ganglion with novocain to obtain the required anesthesia We injected 300 cadavers making 600 injections In some cases we went under the ganglion and that made us fail, in others, over the ganglion, sometimes hitting only a part of the ganglion I usually get it the first or second time and it comes easy after doing a few You should, of course, inject novocain before the alcohol If you get complications, you do not inject the alcohol but withdraw the needle and make a second puncture If the neuralgia is confined to the third division, you do not necessarily inject the ganglion, but the third division only However, it is not difficult to inject the ganglion We do have recurrences, but when the operation is done right along, the procedure is not so difficult as has been intimated by Dr Sachs Sometimes we do find a difficult case, sometimes the material will not diffuse through the ganglion easily Be sure to use the novocain first It saves getting into these terrible complications

Dr Lewis John Pollock, Chicago It was not my intention either to provoke or to enter into a general discussion as to the merits of alcoholization of the component portions of the nerve or the ganglion itself I had felt, contrary to the impression of Dr Dorrance, that injection of the ganglion was difficult, irrespective of any procedure known at the present time, and that if a method could be devised which would make it more certain and less liable to be followed by any untoward results we would be doing some service The dangerous zone in doing the Hartel injection lies not anteriorly but posteriorly, inferiorly and internally If the needle is kept so that it enters not more than one or two millimeters below the shadow of the anterior border of the petrous portion of the temporal bone, it cannot go either too far back or too low down Therefore, it will strike either the external plate of the pterygoid or the large wing of the sphenoid and you can do no damage to the structures here As to Dr Grinker's apprehension concerning the production of corneal ulcers one should, of course, mention this complication under the discussion of advantages and indications and contraindications of injection of alcohol, and other methods of surgical treatment of trifacial neuralgia as well In reply to Dr Bliss I would state that the ganglionic as well as the intraneural injections are only temporary But in experimental work done by Byrnes it has been found that the sensory cells of the ganglion itself do degenerate and that this practically puts the nerve out of commission, more so than injections into the nerve itself Of course it is not necessary to inject the ganglion by this method, you do not have to push the needle in all the way, you can inject the lower branch alone and that is the branch which is difficult to inject The middle branch is easily injected And it is not necessary to include all the ganglion in the injection if one proceeds carefully if one is guided by proper measurements he will be able to separate the injection of the third branch from that of the first I was very glad to hear *Dr Dorrance* bring out the point that one can inject the third branch alone

Referring to Dr Sach's remarks from a review of the literature as well as from personal observations I feel certain that these untoward accidents do not result in permanent damage and further that they occur but very seldom, and exceedingly seldom as compared with the general results obtained by all general surgeons collectively in operations on the gasserian ganglion or its sensory root

A FURTHER NOTE ON THE DIAGNOSTIC VALUE OF RETROBULBAR NEURITIS IN EXPANDING LESIONS OF THE FRONTAL LOBES

WITH A REPORT OF THIS SYNDROME IN A CASE OF ANEURYSM OF THE RIGHT INTERNAL CAROTID ARTERY *

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Difficulty in the diagnosis of cerebral lesions varies directly with the degree of physiologic latency possessed by the affected brain area

Again, even when tissue subserving active function becomes irritated or destroyed by disease, our difficulty in decision as to the part involved depends largely on the degree of objectivity in the phenomena produced

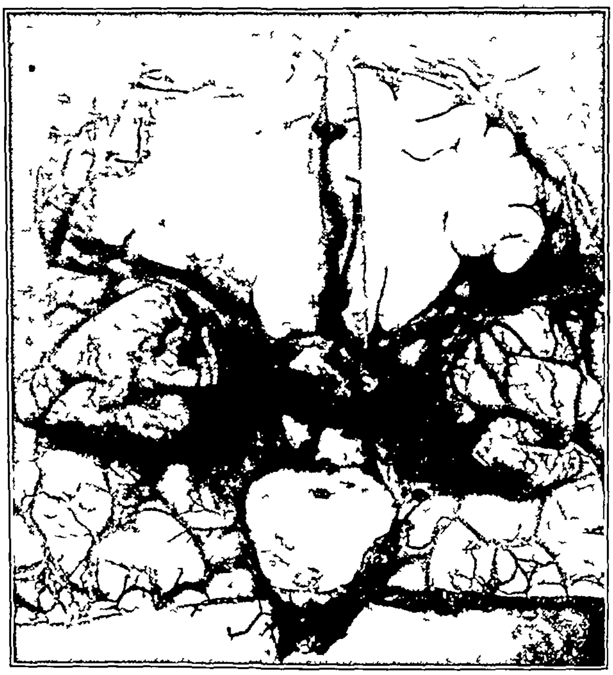

Fig 1 —Inferior aspect of brain showing aneurysm of right internal carotid artery The optic nerves have been removed and would lie on the aneurysm between it and the observer

The vertigo accompanying cysticercus of the fourth ventricle eludes the descriptive powers of the majority of patients, nor are the uncinate fits associated with irritative processes in the hippocampal gyri more easily portrayed in consequence of the difficulty in describing concretely such subjective states, occurrences of the most precise character are apt to be misinterpreted by even alert observers In the recognition of disease affecting the frontal lobes there is ample illustration of the truth of these general propositions These gyri are not only highly latent, but such exiguous symptomatology as has been ascribed to them consists mainly of certain ill-defined abnormalities of mentality and conduct

It is, therefore, proposed in this short communication again[1] to draw attention to a syndrome referable to the inferior frontal areas, a clinical picture also which is capable of such objective investigation as to facilitate decisively the diagnosis of pressure-producing lesions of these parts

The sign of which I wish to speak is the occurrence of a true retrobulbar neuritis, with the formation of a central scotoma and primary optic atrophy on the side of the lesion together (if pressure be sufficiently great) with ipsolateral anosmia *and papilledema* in the opposite eye The mode of production of this situation may be illustrated by the case of a woman, aged 53, kindly referred to me by Dr John Shannon in

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* Read before the Section on Nervous and Mental Diseases at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

[1] Kennedy Foster Retrobulbar Neuritis as an Exact Diagnostic Sign of Certain Tumors and Abscesses of the Frontal Lobes Am Jour Med Sc September 1911

February of this year This patient complained only of blindness in the right and decrease of vision in the left eye The history was as follows

All her life she had been apparently strong and of good physique and health, she had borne three children, all of whom were healthy There had been no miscarriages In September, 1915, without any previous premonitory symptoms she found that she was not seeing clearly with the right eye This symptom was definite from the first and progressed from week to week An examination at that time showed, first, that there was an enlargement of the right blind spot and, later the definite formation of a small central scotoma, complete for form, and a larger scotoma encircling the other, complete only for color This central visual defect became, as the weeks passed, more pronounced until, at the end of two months, the patient was able only to see moving objects in the periphery of the right visual field Most properly her frontal and sphenoidal sinuses fell under suspicion Roentgenograms were taken which failed to demonstrate any abnormality of these parts However, lest a mistake should have been made in the radiographic deductions, an exploration of the sinuses was performed, with negative results There were no other subjective symptoms at that time, but the reaction of the right pupil was diminished in extent, the pupil reacted to light quickly, though with small amplitude, but speedily rebounded, the degree of illumination having been maintained the while This phenomenon has been called the retrobulbar pupillary reaction, in that it occurs apparently exclusively in conjunction with retrobulbar neuritis The existence of this latter condition was further demonstrated by the fact that the right optic nerve as seen by the ophthalmoscope showed a distinct pallor in its outer part The patient remained well with the exception of occasional very slight headache

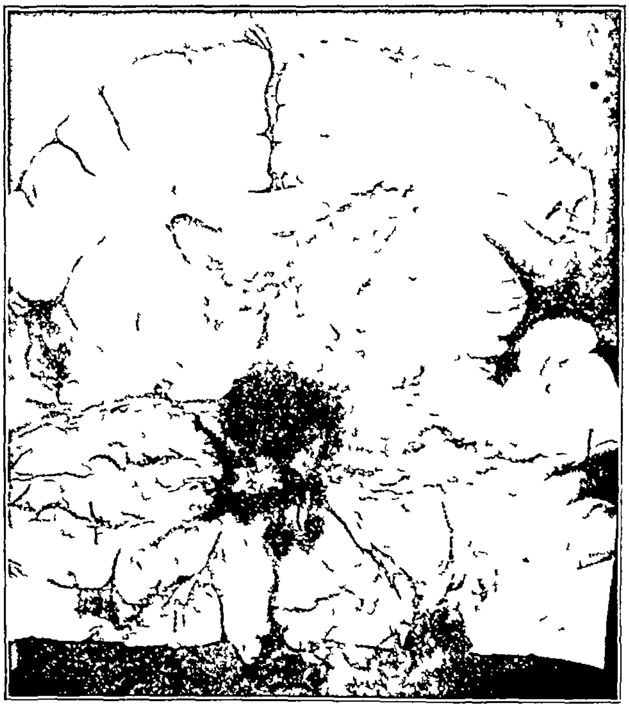
Fig 2 —Section through brain showing upper aspect of aneurysm Notice compression of right caudate nucleus and capsule with enlargement of anterior horn of right lateral ventricle

This headache was adjudged to be the result of the various sinus operations and so excited but little comment The patient never had experienced headache throughout the whole of her life In February, 1916, when shopping, she noticed slight dimness of vision affecting the left eye A perimetric examination, carried out that day by Dr Shannon, revealed an enlargement of the left blind spot, which in the next three weeks increased in size to form a central scotoma in the left visual field, in a manner precisely the same as had occurred on the right side six months previously

The diagnosis made by various observers at that time was that the patient apparently was the subject of a so-called von Leber's optic atrophy It may be pointed out here that this group of atrophies is indeterminate and vague and that the etiologic factor is only presumed to be obscurely toxic When she came under observation in February, however, it appeared certain that a toxic factor would not operate by attacking and destroying a single optic nerve and then resume its activity on the other six months later A disseminated toxin has symmetrical and synchronous results

A careful examination then revealed the fact that previous to her attack of September, 1915 she had had three transient attacks of double vision, and that after that date she had been troubled with frequent transient numbnesses in both hands and feet, these being rather more evident on the left side Neurologic examination then showed the condition of the right pupil to be as already described A similar state affecting the left pupil was incipient A very slight haziness was made out on the upper nasal margins of both disks The physiologic pit in each was clear, the lamina cribrosa evident, and the blood vessels undisturbed

Her sense of smell was acute in both nostrils No nystagmus, strabismus or diplopia The hearing was good The area of distribution of the fifth nerve was unaffected Repeated examination gave rise to the suspicion that the lower part of the left side of the face was less strong than its fellow

There was a well-marked fine tremor in the right hand when held outstretched This was quite constant, was diminished by purposeful movement, and never affected the left hand It was thought there was a little weakness in the left grasp

The deep reflexes on the left side were rather doubtfully greater than those on the right The abdominal reflexes at the beginning of the examination were on each side explosively brisk, but repeated stimulation, first of the right side then of the left, maintained over a period of seven minutes, produced an important and interesting situation, at the end of that time the abdominal reflexes on the right side were almost as active as at the beginning of the experiment, whereas those on the left side had completely disappeared

The plantar reflex on the left side was very sluggish and of equivocal type, that on the right was invariably flexor These facts led to the postulate that the motor fibers subserving the left side of the body were slightly deteriorated in function A cause capable of producing the blindness and the very minute degree of left sided hemiparesis would necessarily be one pressing downward on the optic nerves and upward on the motor fibers coming from the right side of the brain

Furthermore, the lesion would have to be of an expanding character and so capable of exerting pressure in different directions In one of the Roentgen-ray plates a slight shadow was seen in the frontal region, a shadow which seemed to support the theory that the patient was the subject of a tumor lying at the base of the right frontal lobe The fact that the tumor was sufficiently large to reach from the right to the left optic nerve and that six months were required for symptoms to be developed on the left side after the affection of the right, together with the entire absence of the generalized symptomatology associated with the development of brain neoplasm—all these considerations pointed to the benignity of the growth It appeared that in all probability, the tumor would turn out to be an endothelioma, a type of neoplasm of slow growth, frequently sufficiently dense in structure to give evidence of its presence by radiograph, and, by reason of its very gradual enlargement, capable of becoming of great size without at the same time producing marked cerebral symptoms The brain tissue in such cases is given sufficient time gradually to accommodate itself to the encroachments of the foreign body and so there is produced no more than a very slight deterioration of function

One may point out here the fact that the patient was able to smell distinctly in each nostril, a circumstance which occasioned the observer no little surprise A growth sufficiently large to compress both optic nerves might have been considered capable of compressing both olfactory tracts The other circumstances of the case, however, so strongly pointed to the existence of tumor formation in the situation mentioned, that operation was decided on and carried out Dr Elsberg exposed and elevated as far as possible the right frontal lobe and succeeded in demonstrating a large periphery of the sublying bone On the inner surface, near the falx, some pinkish-gray gelatinous-looking tissue was seen, which was thought by us to be the outlying part of a glioma, the central origin of which could not be brought into view

A decompression operation was consequently carried out without, fortunately enough any attempt being made to remove the growth The patient recovered excellently from the immediate effects of the operation and remained feeling perfectly well for some two and a half months with the exception of some doubtful further reduction of vision in the left eye At the end of this time however, it was discovered that complete anosmia had occurred, which gave rise to the belief that the tumor had increased very considerably in size A week after this examination the patient fainted one morning, there was a slight convulsion, chiefly on the left side of the body, the coma deepened and death occurred six hours later

An examination of the brain revealed a ruptured aneurysm of the right internal carotid artery about the size of a small walnut and of a solid consistency, owing to contained fibrinous matter This aneurysm caused marked pressure on the right optic nerve just in front of the chiasma, and, to a lesser degree, on the left optic nerve also Upward and to the right it had succeeded in compressing descending fibers from the right motor area with some deformation of the anterior part of the right caudate nucleus The anterior horn of the right lateral ventricle was considerably larger than its fellow

This case is shown for two reasons first, because of the remarkable rarity of aneurysms of a right internal carotid artery, and second, and chiefly, because, as has been said, its symptomatology offers a very important clue to the diagnosis of expanding lesions in the subfrontal area Papilledema is now generally believed to be the result of the forcing of fluid out of the cerebrospinal pond down the vaginal sheath of the optic nerve to the nerve head There it accumulates and is seen by the ophthalmoscope as a localized papillary swelling combined with venous tortuosity Such is the mode of production of papilledema brought about by the presence of an expanding lesion anywhere in the cranial cavity, so long as this lesion does not take origin from the beginning directly in contiguity with the optic nerves themselves When this latter phenomenon occurs, a completely different series of events takes place Instead of fluid being forced down the vaginal sheath there is an obstruction on the vaginal sheath preventing the possibility of such an occurrence Also the growth, by its pressure on the nerves, causes degeneration to occur directly in the nerve itself The order in which the fibers of the optic nerve become affected is constant

We are aware of the existence of varying degrees of physiologic delicacy in the optic nerve bundles, according to the retinal region in which they originate, parallel degrees of susceptibility to trauma would likewise appear to occur in the same fibers That is to say, the macular bundle which subserves central vision, while not placed peripherally in the nerve, and so not exposed to direct pressure from without, owing to its aforesaid greater vulnerability will always degenerate earlier than the fibers more directly compressed The result will be rapid loss in acuity of vision and the formation of a definite central scotoma In the majority of cases this will be accompanied by deterioration of function in the ipsolateral olfactory bulb This was spared until late in the disease, in the present instance owing to the posterior situation of the lesion

The diagnosis of aneurysm in this case was, of course, quite unsuspected during the patient's lifetime The presence of syphilis was entirely excluded by the negative history and annectant circumstances, by repeated examinations of the blood by the Wassermann reaction, all of which were entirely negative, and by the existence of a cerebrospinal fluid normal in all respects with the exception of an increased globulin content, a finding which only served the more to strengthen one's belief in the presence of new growth

However, the signs which have been here discussed were sufficient to make plain the exact situation of an expanding lesion within the skull cavity It is submitted that the recognition of this syndrome may do something to elucidate diagnosis in certain obscure cases of frontal neoplasm and, perhaps, at the same time serve in a measure to separate a group of cases from the great generic class of toxic amblyopias

ABSTRACT OF DISCUSSION

Dr Francis R Fry, St Louis I think it was Marcus Gunn, an English ophthalmologist, who first affirmed that the 'rebounding pupil," the pupil described by Dr Kennedy, was pathognomonic of retrobulbar neuritis I think, however, that in so considering it there might be some confusion, because we certainly see a pupil behaving in this way, sometimes unilaterally, where there is no retrobulbar neuritis And it might only be accepted I think, as of affirmative value, when the fact of neuritis is otherwise suspected

Dr. Foster Kennedy New York I assure Dr Fry that I would not think of diagnosing lesions of the frontal lobes on the pupillary reaction alone This would only be of value, of course in corroboration of other phenomena

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An Early French View of Fevers—In the Napoleonic era, French physicians made their diagnoses on the nosographic scheme of Pinel, which divided fevers into six classes—the primitive or essential, the inflammatory, the bilious or gastric, the pituitous or mucous, the putrid or adynamic, and the malignant or ataxic These distinctions, mere fanciful verbiage for active practitioners to pick and choose from in diagnosis, Bretonneau synthesized into the doctrine of the unity of the essential fevers, showing clinically that most of the fevers described by the older observers and listed by Pinel are what we now know to be typhus and typhoid Bretonneau was the first to elucidate the pathology of typhoid fever (*dothienenterite*) and to make it known for what it is Broussais sometimes diagnosed typhoid as "phlogosis of the brain," on account of the terminal delirium, and the Peyer lesions as 'intestinal cancer consequent on gastro enteritis" Bretonneau s correspondence with his pupils, Velpeau and Trousseau, shows that he located and understood the lesions in Peyer s patches as early as 1820 These letters clearly ascertain his priority to Louis, whose great work on typhoid was published, simultaneously with Bretonneau's paper, in 1829 In a letter of 1828 nearly ten years before Gerhard's time Bretonneau writes the significant sentence "You will see some day that petechial typhus will be recognized as something different from dothienenteritis" One summer day in 1820, Velpeau, overcome with disgust at the conduct of a necropsy on a typhoid patient, actually leaped into the arena at the Charite and snatching a scalpel, demonstrated the Peyerian lesions to the amazed Parisians, who, following the teachings of Broussais believed that these lesions were only the consequence of a simple gastro enteritis—'Armand Trousseau A Master Clinician," Fielding H Garrison, M D

APPENDICITIS IN CHILDREN *

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ABINGDON, VA

So much has been written on the subject of appendicitis that there is little left to be said If one, however, may be allowed to record his impressions from his personal experience with a very important phase of the condition which I have selected as my subject, I hope it may, at least, furnish a basis for an interesting discussion

In reviewing our case histories, covering a period of five years, we find the records of 404 cases of appendicitis This embraces all classes of appendicitis, and includes all ages Our youngest patient was 4 years of age, and the oldest 63 Of the 404 cases, thirty-seven, or approximately 9 per cent occurred in children of from 4 to 14 years of age Two of the thirty-seven children died following operation, giving an operative mortality of 5 4 per cent In addition to this, one child entered the hospital in a moribund condition, and died without operative interference, and one is known to have died of general miliary tuberculosis since leaving the hospital The remaining thirty-three patients, so far as we can learn, are living and well Of the 367 adult cases of appendicitis, there was also an operative mortality of two, or 0 54 per cent

G C E Simpson[1] reports his conclusions on thirty-four cases of appendicitis in children, and records a mortality of five, or 14 7 per cent Alexander Mitchell[2] contributes an interesting study of forty cases of acute appendicitis in children, ranging in age from 14 months to 14 years In all of these forty cases the inflammation had extended beyond the peritoneal covering of the appendix The mortality of this series was 25 per cent It is significant to note in this connection that the same author says that during the period covered by this report all of his patients in whom the infection was limited to the appendix recovered Gray and Mitchell[3] report another series of 200 cases of appendicitis in children, 126 of these were classified as acute In this group there was a mortality of 15 per cent

TABLE 1—CLASSIFICATION OF CASES

Condition	No of Cases
Chronic simple appendicitis	6
Chronic appendicitis, following former drainage of abscess	2
Subacute appendicitis	2
Tuberculous appendicitis	4
Acute nonperforating appendicitis	4
Acute gangrenous perforating appendicitis with abscess	13
Acute perforating appendicitis with general diffuse peritonitis	6
Total	37

While I have been unable to obtain any recent statistics from the American clinics, limited to this particular group of appendix cases, I think there is a general feeling that our mortality is too high, and we want to do better It is somewhat discouraging to have to say to a parent "Your child has appendicitis The best we can do for him is to give him one tenth of the chance of recovery that an adult, suffering from the same disease, has" My chief object in writing this paper is to appeal to the general practitioner, and through him to the parent, for a closer cooperation with us in our efforts to give the child with a "belly ache" a better chance to live

While it is rather difficult to give each case of appendicitis a clear cut pathologic classification, our series, which forms the basis for this paper, may be roughly grouped as in Table 1

Of the six chronic cases, three had had acute attacks previously Five of the thirteen patients in the appendical abscess group were admitted to the hospital with more or less diffuse peritonitis, but the general peritonitis subsided under the Fowler-Murphy-Ochsner plan of treatment, so that they came to operation with a circumscribed abscess

The average duration of illness in the twenty-three cases, when the patients were admitted to the hospital was six days Several of the worst cases of general diffuse peritonitis gave a history of only two days' illness, but it is hard to believe that so widespread an inflammation could have developed in such brief time It seemed more likely that these children had been the victims of appendicitis for several days before their condition was discovered by the parent, or before a physician was called

TABLE 2—POSTOPERATIVE COMPLICATIONS

Condition	No of Cases
Pyelitis	6
Secondary abdominal abscesses requiring secondary operations for drainage	4
Postoperative pneumonia toothache and alveolar abscess	1
Postoperative obstruction	1
Cerebral embolism (?)	1
General miliary tuberculosis	1

Three of our patients had tonsillitis just preceding their appendical attack, and we believe the tonsils were the portal of infection in these three cases Among the postoperative complications were the condition given in Table 2

One of the secondary abscesses sloughed into the bladder, requiring an operation for the drainage of the abscess and closing of the bladder I have placed cerebral embolism in this list of complications, with the addition of an interrogation point, because we were unable to secure a necropsy, and the diagnosis was made on the clinical evidence only

In our experience the most constant symptom of acute appendicitis in children is leukocytosis The total leukocyte count in our series ran from 9,000 to 34,000 per cubic millimeter, with the polymorphonuclears between 72 and 92 per cent The average leukocyte count is 17,400 per cubic millimeter, with an average polymorphonuclear count of 82 per cent There was no case that did not show a marked increase of the polymorphonuclears, and only one case in which the total count was as low as 9,000 In a general way the polymorphonuclear count has represented to us the virulence or intensity of the infection, and the total leukocyte count has indicated the resistance or fight that the individual was maintaining against the systemic invasion of the infecting microorganisms Thus if the patient should show a very low total leukocyte count, with a high percentage of polymorphonuclear leukocytes, we would be very much discouraged with regard to the prognosis, whatever the clinical symptoms at the time On the other hand, a marked leukocytosis with a moderately high polymorphonuclear count has always indicated a favorable outcome

The point that has impressed me most in reviewing our cases is the very significant frequency of perforative appendicitis following purgation Of nineteen cases in which the appendix had perforated when the patients were admitted to the hospital, sixteen gave a positive history of having been freely purged *In the* remaining three cases the record does not mention whether the patient had or had not received a cathartic On the other hand, operation was performed in four acute cases, in one on the fourth day, two on the fifth day, and one on the seventh day, of illness In all of these four cases a purgative had been withheld, and in none of them had the appendix perforated at the time of operation

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* Read before the Smyth County Medical Society at Marion Va May 25 1916

[1] Simpson G C E Brit Jour Child Dis 1913 x 400

[2] Mitchell Alexander Brit Jour Child Dis 1912 ix 355

[3] Gray and Mitchell Brit Med Jour Feb 21 1914

There are several reasons for the high mortality in children The early symptoms are not so clear-cut and definite as in adults The attack in children often follows a dietary indiscretion, and the parents naturally attribute the abdominal pain and nausea to an intestinal colic due to an overload of indigestible food The violence of the symptoms is frequently not at all in proportion to the degree of appendical inflammation We have had two patients walk into the hospital with their parents to be examined because they had a "pone" in the right lower abdomen The "pone" in each case proved to be an appendical abscess The progress of the inflammation is particularly rapid in children The appendix usually lies high up in the abdomen, and there seems little effort on the part of nature to wall off the inflammatory process by the formation of adhesions, and perforation usually results in diffuse general peritonitis Children as a rule are poor subjects for abdominal surgery, they withstand shock badly and hemorrhage worse The child has much less blood than the adult, and the loss of a comparatively small volume in the young subject will often prove fatal

Clopton[4] has recently reviewed the literature on appendicitis in children, and comes to the conclusion that this disease in infancy is rare He reports three of his own cases in which the condition was caused by pinworms in the appendix He calls attention to a point of tenderness in the loin a little lower down than that due to pyelitis I think this is due to the fact that the appendix in children is often postcecal Clopton also emphasizes the aid afforded by rectal palpation We have found these two points to be of considerable value in diagnosis

G E Baxter[5] has investigated the subject of appendicitis in infants under 2 years of age, and thinks that the incidence of this disease in infants is much more frequent than is usually believed He reports one case in a child 18 months of age

The symptoms of appendicitis in children are often rather atypical Zesas[6] has reported an interesting series of cases in which the principal symptom was limping The pain was referred to the right hip and groin One case was even referred to the orthopedic clinic for treatment as a case of hip-joint disease All of these patients were cured by removal of the appendix

The principal conditions which may be confused with appendicitis are pneumonia, pyelitis, Pott's disease, typhoid fever and intestinal obstruction Pneumonia gives a leukocytosis even higher than acute appendicitis, so the blood count is not a differential point But a diagnosis of appendicitis in children should not be made without a careful examination of the chest Rapid respiration, cough and flushed cheeks should suggest the chest as the more probable seat of trouble Inflammation of the renal pelvis is a particularly confusing possibility when pus is found in the urine in a suspected case of appendicitis On the one hand, we realize that pyelitis may exactly imitate the clinical syndrome of acute appendicitis On the other hand, we know from abundant experience that pus, blood, albumin and casts may be found in the urine of a child suffering with appendicitis as the primary condition If the child's illness is due to pyelitis alone the amount of pus is usually greater than when it complicates appendicitis The point of greatest tenderness, rigidity, or a mass may be of aid The rectal examination is often of particular value There should be no confusion with Pott's disease if the doctors would make a habit of examining the spine In typhoid fever, pain is preceded by at least two or three days of fever, headache and general malaise, whereas in appendicitis pain is the first symptom Uncomplicated typhoid fever, too, will not have a leukocyte count of over 10,000 The question may remain doubtful between acute obstruction and acute appendicitis a matter of little clinical importance, as both are unquestionably emergency surgical conditions, and their preoperative management is the same An enema ought to clear up the possibility of any simple explanation of the stomach ache

Early diagnosis and early operation seem to offer the best hope of reducing the mortality If prompt operation is advised for adults it is much more important for children Many surgeons advocate immediate operation on a child whenever a diagnosis of appendicitis is made, or whenever the case comes within the hands of the surgeon There are many reasons for the endorsement of this as a sound surgical principle Children are naturally restless, rebel against confinement to bed, and restraint, and generally take treatment badly In addition to this, when food is withheld from a child, an acidosis soon develops and this is often a troublesome complication As a prophylaxis against this condition, we give all children glucose and soda, by bowel, after operation

In our experience the administration of purgatives in the early treatment of appendicitis has done more harm than any other factor connected with this disease I expect some of my friends among the older general practitioners will disagree with me on this point They will argue that every case of stomach ache in children is not appendicitis, and that it is necessary to move the child's bowels as a therapeutic test to see whether or not the trouble is caused by some indigestible article of food This point of view is practically correct, but I maintain that every advantage can be gained by the use of a soapsuds enema that can be expected from the use of castor oil, salts or calomel, without the danger of rupturing a gangrenous appendix, if the child should happen to have appendicitis In justice to the general practitioner, I must say that in many cases, the parents have applied the above mentioned therapeutic test before the physician is called For this reason it is necessary that we should have the cooperation of the layman before this danger can be eradicated I would advocate that the state boards of health publish in the public health pamphlets which are distributed to the general public the advice to parents that, whenever a child is taken with abdominal pain, accompanied by nausea, vomiting or local tenderness, it should be put to bed, and nothing given it by mouth, until the family physician is consulted

If the physician is doubtful about the condition, it would be well for him to secure surgical consultation, and if possible get a blood count as leukocytosis is the most constant symptom of acute appendicitis

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[4] Clopton M B Jour Missouri State Med Assn March 1915

[5] Baxter G E Illinois Med Jour June 1914

[6] Zesas D G Arch gen de chir Paris xii 1409

SOME PRACTICAL ASPECTS OF SCHISTOSOMIASIS AS FOUND IN THE ORIENT

PRELIMINARY REPORT

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CAVITE, P I

Recent investigations indicate the great prevalence of schistosomiasis in certain localities of the Orient The free commercial intercourse with this part of the world suggests that not a few practitioners in the United States may eventually have patients who have at some time resided in the Orient, presenting some of the interesting and perplexing symptoms of schistosomiasis

On joining the U S S *Helena* at Ichang, China — about a thousand miles up the Yangtsze River — it was my experience to have fourteen peculiar cases at sick call that morning in which symptoms developed varying from acute bronchitis and urticarial dermatitis to dementia praecox associated with jacksonian epilepsy and hemiplegia It was two weeks later, on arrival at Hankow, China, that continued laboratory examinations and further study of the literature convinced me that my cases with tentative diagnoses of cerebral syphilis, sunstroke, hepatic abscess, acute phthisis, etc, might have the same etiologic agent, namely, *Schistosoma japonica* All cases occurred among forty-two men who had been on a three days' landing party to the gorges above Ichang, and had been in bathing in subsidiary streams

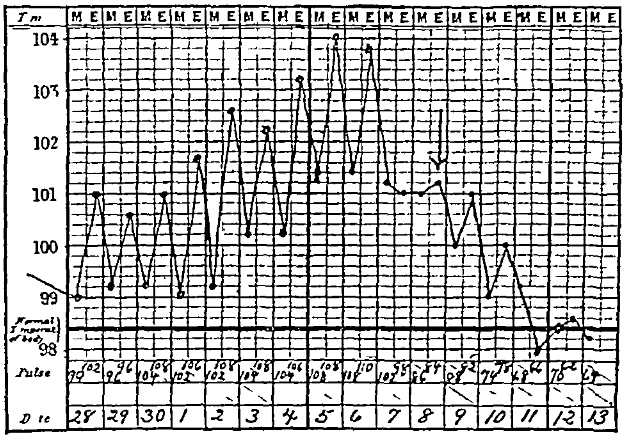

Chart 1 —Temperature chart, Case 4 Arrow points to administration of 0 6 gm salvarsan

MODE OF INFECTION

Schistosomiasis in the Orient is caused by a blood fluke, a digenic trematode, inhabiting principally the blood vessels of the portal systems The eggs are oval yellowish-brown, similar in some respects to hookworm ova, and hatch out in a short time into ciliated larvae (miracidia)

It was first shown that a 1 1,000 solution of hydrochloric acid will kill the miracidia, which rendered injection by ingestion improbable Many observers have failed to cause an infection by the application of miracidia to cutaneous surfaces, but Matsuura and Yamamota found ciliated larvae in the skin of animals infected by this parasite

In view of the known life history of closely related parasites, an intermediate host was sought Miyairi found the infective stage in an aquatic snail Recently Leiper and Atkinson were able to follow the development of the ova from an infected dog through the liver of a snail (*Katayama nosophora*) to the recovery of an adult parasite in the blood vessels of laboratory bred mice exposed to infected water

The entrance of the nonciliated young parasites (cercaria) is through the mucous membrane and possibly through the skin Eight cases of external auditory infection were treated among the forty men returning from the landing party, but no relationship could be traced between the ear cases and those presenting the initial symptoms of schistosomiasis It was noticed that there was a greater percentage of infection among the venereal cases A large percentage of those infected usually give a history of exposure of body above the hips suggesting entrance through rectal or genito-urinary mucosa

SYMPTOMS

Symptoms are divisible in three stages, and this classification, combined with the protean manifestations, reminds one of syphilis

First Stage, or Stage of Invasion —This is the so-called urticarial or Yangtsze fever In fourteen cases observed aboard this ship the patients gave a history of bathing in clear, still pools of the smaller streams above Ichang The symptoms of urticaria, subcutaneous edema and elevated temperature appeared from twenty-four to seventy-two hours after exposure to the infected water In eight out of ten cases there was diarrhea, and in seven this was accompanied by cramps, four of the eight were troubled with nausea and vomiting There was pain and tenderness over the liver in one third of the patients and half of them were troubled with cough, expectoration, and other symptoms of pulmonary affections In one case the pulmonary symptoms were so well marked as to suggest incipient pneumonia This was the only case presenting the evanescent areas of pulmonary dulness described by other writers Eight out of the ten cases had elevated temperature varying from 100 to 104 F in 75 per cent there were urticarial wheals and subcutaneous edema varying from two or three per patient, to cases in which the face was so swollen that the features were scarcely recognizable

From a perusal of the foregoing it would appear that only one, or all of the symptoms enumerated may be present in a patient suffering from the initial stage It therefore seems possible that the symptoms of this stage may be absent or escape notice It is quite possible that several patients suffering from minor symptoms were not seen by the medical officer

Second Stage —"In the second stage of the disease — that is, after the temperature comes down to nearly normal, and eggs begin to appear in the stool — symptoms may be divided into those of convalescence and those that go on to the third stage "[1]

This is the stage that is most important to bear in mind when treating former residents of the Orient Whereas continual reinfections are apparently necessary for the production of the tertiary stage, it seems reasonable to suppose that a minor number of parasites may persist in the body, causing various subjective and objective symptoms, such as transient cough and expectoration, diarrhea and temporary abdominal pain and tenderness, hepatic disturbances, anemia, attacks of pyrexial conditions, etc The pathology of the disease suggests that the second stage may persist for some time, and my experience with those who have apparently recovered from the first stage confirms this view Unfortunately the diagnosis, in the second stage, is often obscure and difficult The worms are not always in sufficient numbers for ova to be easily located, and eosinophilia may vary One patient who had apparently recovered from the initial symptoms and was troubled only with lassitude and slight debility — called laziness by his companions — was taken as an example of the possibility of latent infection Most of my leisure time was spent in searching for ova in his stools Fully a hundred examinations were made before ova were found, and this stool contained as many as three ova to the slide

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[1] Laning R H U S Navy Med Bull January 1914

The mental attitude of the schistosomiasis patient is striking It varies from calmness and indifference to dulness and confusion The patient never seems to worry about his physical condition A case in one of the hospital corps, with hepatic symptoms, illustrates this indifferent attitude This person appeared totally indifferent to all untoward signs and symptoms of his case, and even the suggestion of having to resort to operative measures failed to cause him to show any detectable signs of apprehension concerning his condition When all symptoms had subsided within seventy-two hours after an injection of salvarsan, he was equally apathetic to the beneficial results The patient with a daily temperature of 102 and 103 often wants to be up and about A civilian friend of mine with an elevated evening temperature of six weeks' duration, with slight eosinophilia, presumably due to schistosomiasis, was able to carry on his work and play tennis each day In fact, one of the hottest days of the year I played a five-set tennis match with him, although he had a temperature of 102 F

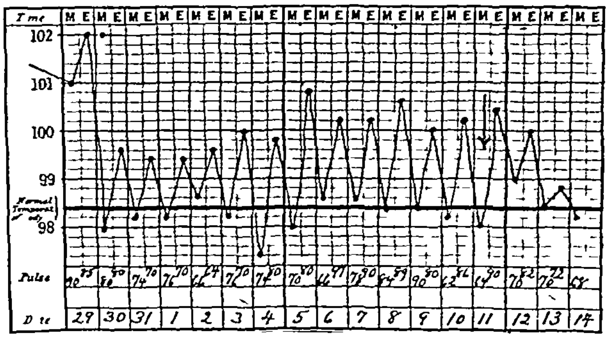

Chart 2 —Temperature chart Case 5 Arrow points to administration of 0 6 gm salvarsan

Third Stage—This stage is comparatively rare in foreigners I have heard of but two cases, but there are probably many others Briefly, this stage consists of hepatic and splenic hypertrophy followed later by a shrinking of the liver, cachexia, emaciation, ascites, and, finally, general anasarca Dyspeptic symptoms are pronounced, associated with dysentery and diarrhea It is often possible to make a snap diagnosis in certain cases of this stage by inspection alone, when passing through an infected locality The large distended abdomen emaciation, swollen ankles, etc, give a characteristic picture Usually the patient in this case is a native farmer repeatedly reinfected by the dissemination of human excreta, which is extensively utilized for fertilization purposes in this part of the world

DIAGNOSIS

In the first stage, this is not difficult if accompanied by the characteristic urticarial rash and subcutaneous edema In two cases with the only symptoms of simple continued fever, the diagnosis would probably have been overlooked had they occurred at any other time The eosinophilia appears within from three to four weeks and is often well marked The highest percentage in the fourteen cases was 27 per cent of large granular eosinophils, but the number of finely granular cells with acidophilic affinities raised the percentage to 65 per cent The ova begin to appear in the stools about a month after the beginning of the initial symptoms They are found in bits of blood-streaked mucus on a hardened stool It is well to give opium for a few days before in order to get constipated feces In one stool an adult female schistosoma was found

REPORT OF CASES

Case 1—The officer in charge of the landing party had a mild case Forty-eight hours after bathing, he noticed one urticarial wheal about 6 cm in diameter just below the umbilicus, with two smaller ones on the lower extremities No other symptoms were noted This patient has been under observation for the past year, and frequent blood counts have shown no eosinophilia over 5 per cent Repeated examinations of feces have been negative For the past year this officer has been below normal in health suffering from anemia, loss of weight, and minor gastro-intestinal disturbances He is at present under treatment for these, which I believe—yet have not been able to demonstrate—to be due to a mild and obscure infection of *Schistosoma japonica*

Case 2—The patient had the usual fever with the urticarial dermatitis of body and extremities and subcutaneous edema of face and forehead, so-called bumps" Six weeks later he developed a large lumbar abscess, which was opened under a general anesthetic Several eggs were found in the feces, and one adult schistosoma He was transferred to the Naval Hospital, Canacao, Cavite, P I

BENEFICIAL RESULTS OF SALVARSAN

There is little probability that a concomitant syphilitic infection was the cause of the beneficial effects of salvarsan in the following cases The salvarsan was first administered in Case 7, before the diagnosis of schistosomiasis was determined, on the ground that perchance the symptoms were due to cerebral syphilis, although the past history was negative Two of the cases subsequently gave repeatedly negative Wassermann reactions, and in no case were there any indications of a previous syphilitic disease

Case 4—The patient was first admitted with temperature of 104 about forty-eight hours after swimming No urticarial or subcutaneous edema was present Fever lasted two weeks The patient was readmitted one month later with a daily rise of temperature Salvarsan was given, and the temperature returned to normal in three days Eosinophilia was from 17 to 25 per cent The eggs in this case were darker and more oval than usual suggesting a different species (Chart 1)

Case 5—There was no history of any initial symptoms The patient was transferred from another ship to the *Helena*, with a temporary diagnosis of hepatic abscess Pain, tenderness and muscular rigidity were present over the right hypochondrium and the liver was enlarged Eosinophilia was 12 per cent with ova present in the stool Salvarsan, 0 06 gm was given intravenously The temperature dropped to normal and all other symptoms subsided within forty-eight hours (Chart 2)

Case 6 — An American civil engineer living in Ichang whose duty, in surveying the railroad of Ichang to Chungking, caused him to be exposed in infected regions, had had an evening temperature of from 100 to 102 for the past six weeks with anemia, lassitude and depression The blood count showed slight increase of eosinophilia One examination of the feces was negative Salvarsan, 0 06 gm, was given intravenously fever disappeared within twenty-four hours, and all other symptoms subsided The patient when seen three weeks later had gained 10 pounds in weight

Case 7 —The patient first reported, July 31, 1914, with numerous wheals over the body and extremities, the face and forehead were swollen with subcutaneous edema, temperature from 100 to 103 F Aug 4, 1914, the dermatitis had almost disappeared, and the patient was up and about Aug 6 1914, the patient returned to bed, beginning hemiplegia was noted, the pupils were contracted and unequal, and the mental condition was confused Aug 8, 1914 paralysis of the right side was almost complete Aug 9, 1914, the temperature was subnormal, the condition was becoming progressively worse, the patient was in coma, pulse 140, respiration 45 and the case was reported to the commanding officer as apparently hopeless Intravenous injection of salvarsan was recommended to be tried as a last resort, and 0 06 gm was given intravenously Twenty-four hours later the pulse, temperature and respiration were normal The patient was able to understand questions and could move the fingers of the paralyzed hand From August 10 to 15, 1914, the condition was stationary, the patient was not oriented He stated that he was on the U S S *Buffalo,* but did not know whether he was in Mexico or the United States He was unable to give the names of any of his shipmates Aug 15, 1914, second dose of 0 06 gm of salvarsan was given intravenously Aug 16 1914 improvement was marked, he was able to raise the affected hand to the head He recognized the medical officer and was fairly well oriented He was transferred this day from the U S S *Helena* to the U S S *Quiros* for further transfer to the Naval Hospital, Canacao Cavite, P I Examination of feces was negative at the time of transfer

The following are some notes from the health record after transfer 'U S S *Quiros,* Aug 20, 1914 Improving daily fairly well oriented able to raise right arm with effort" U S Naval Hospital Canacao P I Sept 12 to Oct 15 1914 "Movement of right arm fairly well controlled, but with slight tremor of fingers and spastic rigidity of arm Blood pressure 120 plus Wassermann negative" U S Naval Hospital Mare Island, Calif, November 13 to December 20 'Only weakness of right arm and hand Although the blood tests are negative, he has shown remarkable improvement under antisyphilitic treatment" Restored to duty Dec 20, 1914, having been on the sick list nearly five months

A similar case of hemiplegia has been described by Tsunada and Shimamuda — cited by Laning — in which the patient suffered during life "from disorder of speech and tremors in both upper and lower extremities with headache and mental disturbances, later from vertigo and jacksonian fits (two or three a day), and finally from right hemiplegia" At the necropsy numerous ova were present in the brain substance

THE POSSIBLE RELATION OF SCHISTOSOMIASIS TO TROPICAL AND SUBTROPICAL NEURASTHENIA

If the view that a certain percentage of cases may have an unnoticeable primary stage followed by an obscure secondary stage is accepted, it would then appear that the difficult recognition and the prevalence of schistosomiasis may partially explain the deterioration of the white race in certain tropical and subtropical regions This will perhaps serve to narrow that ill defined state known as tropical neurasthenia At present, modern medicine reluctantly expends time and labor on the study of conditions, such as tropical neurasthenia, that are not susceptible to scientific interpretations of their causative factors The medical scientists are willing to devote much study on some rare disease, with scientifically explained etiology, affecting an infinitesimal portion of the human race, whereas the obscure causes of the deterioration of the white race in the tropics has not, in my opinion, received full recognition of its importance The laity seems to be more fully aware of its presence than the medical profession In fact, some medical men almost deny the existence of tropical neurasthenia as a definite entity If the most skeptical would spend a short time in conversing with from 10 to 20 per cent of the foreigners living in the Philippines and suffering from neurasthenia, I feel certain that it would convince him of the relative importance of this debilitating condition, which modern sanitation has only partially improved

Therefore, it seems not improbable that a small percentage of the cases returned to the United States suffering from what is colloquially or jocularly expressed as "too long in China" and "Philippinitis," may be latent and obscure cases of schistosomiasis

SUMMARY AND CONCLUSION

1 Recent investigations are indicating the prevalence of schistosomiasis in the Orient and its economic importance to natives and foreigners

2 The adult parasites may exist in the human body in insufficient numbers to permit satisfactory diagnosis by laboratory methods, yet are capable of causing untoward symptoms

3 The result of salvarsan therapy, as symptomatic treatment in a limited number of cases, in the second stage, has been gratifying

4 In view of the close relations existing between the United States and the Philippines and other countries where schistosomiasis is endemic, and the probable frequent latency of the disease, the matter is of importance to physicians in this country and especially to those practicing near the Pacific coast

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Overfed and Underfed —What are the characteristics of the overfed and the underfed? While there are probably exceptions to the rule, the two types may be expected to appear somewhat as follows The first is heavy and of a high color The man of this class is a deep sleeper, and dislikes to get up, he is an optimist, but not remarkably persevering The sparingly fed individual is consistently opposed to the liberally nourished at every point He is under weight, and often deficient in color, a light sleeper, if not actually troubled by insomnia, and sensitive to cold As a worker he may be diligent and efficient though the temperament exhibited is likely to be conscientious rather than enthusiastic The high degree of endurance often noted in men and women who eat lightly affords the strongest argument in favor of such self-denial It is probably to be explained by two circumstances First the intestine is to an exceptional degree free from injurious residues Second the blood and other body fluids are correspondingly free from avoidable by-products of metabolism The resistance to fatigue secured is greatly to be coveted, but it is not unlikely that the cutting down of the food is often too rigorous Depression of spirits is a common sign that the diet should be made more generous —Stiles 'An Adequate Diet"

THE INTESTINAL PARASITES OF TWENTY FOREIGN STUDENTS IN THE UNIVERSITY OF WISCONSIN *

EDWARD J VAN LIERE
MADISON, WIS

As this paper deals with aliens in the United States, the question naturally arises whether foreigners, especially those from the Orient, where parasites are so abundant, are a menace when entering this country There is little doubt that the Chinese and Japanese who work the market gardens and do housework in California are dangerous to public health An inspection in San Francisco in 1912[1] showed infections as follows Of 1,484 Japanese admitted, 581 had *Ascaris lumbricoides*, 452 *Trichocephalus dispar*, and 451 hookworm Of 1,002 Chinamen examined, 789 had Ascaris and 588 had Trichocephalus These figures show that the percentage of infection was rather high The foreigners examined were not of the most desirable class, the lower castes being largely represented On the other hand, the subjects at the University of Wisconsin undoubtedly come from some of the best foreign families, as only those with considerable means would be able to come to the United States for a college course It may be safely assumed, therefore, that the results obtained are conservative as compared with those from more ignorant or poorer classes

The stools used for the present investigation were obtained from the Clinical Department of the University of Wisconsin, through the kindness of Dr J S Evans and Dr R Drane They were first examined macroscopically by spreading on a large piece of filter paper and picking apart with a dissecting needle for such things as proglottids, scolices, or living worms Then each stool was well stirred, and a liberal sample taken by means of a spatula, and put in a smaller jar The sample was then preserved by putting in a 10 per cent dilution of liquor formaldehydi A few drops of phenol (carbolic acid) were added also, as a further preservative This method did away with a large part of the odor and preserved the eggs perfectly

Of every stool at least six smears were made the cover glasses used measuring 2 2 by 4 cm These were examined under a microscope with a mechanical stage, a No 8 ocular and a 16 mm objective being used in searching for ova A higher power, 4 mm objective, was also used in identifying The time taken to examine one of these smears was approximately twenty-five minutes, although in the case of a positive stool, a much greater time was often needed

The feces of twenty male foreign students attending the University of Wisconsin were examined and ten (50 per cent) gave positive results The infections were as follows, the figures referring to the number of the patient (1) Hookworm and *Trichocephalus dispar*, (2) *Hymenolepis nana*, (3) *Schistosoma japonica*, (4) *Ascaris lumbricoides*, (5, 6, 7 8, 9, 10) *Trichocephalus dispar* The infected individuals in several instances showed disorders connected with the presence of the parasites

Case 1 —Australian, Morong Rizal, P I Age 26 years, weight 108 pounds, height 66 inches Infected with book hookworm and *Trichocephalus dispar* showed marked eosinophilia, also chloro-anemia Had experienced much intestinal trouble and complained of abdominal pains, was in very poor health

Case 2 —Chinese, Shanghai, China Age, 21 years Infected with *Hymenolepis nana*, gave no clinical evidence except for the presence of eggs in the feces

Case 3 —Chinese, Tai-an, China Age, 28 Feces contained a few ova of *Schistosoma japonica*, had moderate chloro-anemia and suffered frequently from severe abdominal pains

Case 4 —Egyptian, Cairo, Egypt Age 30 Had a heavy infection of *Ascaris lumbricoides* showed nothing abnormal, apparently in good health, weighing 175 2 pounds and measuring 61 8 inches in height

Cases 5, 6, 7 and 8 —Appeared to be perfectly normal in spite of their infection with *Trichocephalus dispar*

Case 9 —Chinese, Wuchang, China Age, 26, weight 106 pounds, height 60 9 inches Had an infection of *Trichocephalus dispar*, troubled with eczema badly both on upper and lower limbs, also had marked chloro-anemia

Case 10 —Chinese, Chekiang, China Age, 24, weight 83 pounds, height 51 1 inches Severe infection with *Trichocephalus dispar*, troubled with much rectal bleeding, severe chloro-anemia, and showed general parasitic symptoms

Thus the foregoing statistics indicate that 70 per cent of the patients examined showed symptoms which parasitic worms might cause Forty per cent had severe cases of chloro-anemia, urticaria or eosinophilia There is every reason to believe that in the absence of medical attention, it would have been only a short time until the parasites would have undermined the health of some of these persons, and some were certainly a danger to society

It may be said in conclusion that the examinations described in this paper show that there is danger of infection from the average foreign student Other people, doubtless, carry parasites at times, but the percentage of infection among foreigners, and particularly Orientals, is much higher At any institution, therefore, which has a considerable number of such students, there is some danger unless care is exercised

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* From the Zoological Laboratories University of Wisconsin

[1] Glover M W Hookworm Among Oriental Immigrants The Journal A M A June 15 1912 p 1837

[2] The weights quoted do not include clothing

STUDIES OF THE SPINAL FLUID DURING IODID MEDICATION BY MOUTH *

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Examinations of the spinal fluid of persons under iodid medication were made to determine the presence of organic or inorganic compounds of iodin

Study 1 includes observations on five patients in the University of California wards of the San Francisco Hospital, on routine iodid medication, and Study 2 observations on one person to whom very large doses of iodids were given In each case examinations were made of two specimens of spinal fluid At the first tapping as much fluid as possible was withdrawn, the second tapping being made some time later to ascertain whether or not the newly secreted fluid contained a greater amount of iodin, if any Barbat[1] had reported that the withdrawal of spinal fluid while the blood stream was saturated with arsenic allowed a new fluid richer in arsenic to enter the cerebrospinal canal

Study 1 —Iodin was tested for by *myself in the following* manner A portion of spinal fluid was added to some dry sodium carbonate and the mass powdered, the latter was added slowly to a quietly fusing mixture of potassium nitrate and sodium carbonate, the entire mass was allowed to cool, was removed from the crucible and dissolved in distilled water, to a portion of the latter was added some starch paste, and then nitric acid containing a little nitrous acid, drop by drop Controls containing minute traces of iodin gave a blue color but no reaction occurred with any of the fluids examined

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* The first of a series of studies on iodid medication in syphilis undertaken with Dr Charles Tranter of San Francisco

[1] Barbat California State Jour Med October 1915

FINDINGS IN STUDY 1

Identification	Diagnosis	Iodid Medication	Spinal Fluid	
			First Tapping	Second Tapping
Ty 1[illegible]391	Tabes	KI grs XV t i d for 3 mos	Iodin negative	48 hrs later iodin negative
Ab 15107	Transient hemiplegia chronic nephritis	KI grs XX t i d for 17 days	Iodin negative	76 hrs later iodin negative
De 12893	Tabes	KI grs XV t i d for 3 mos	Iodin negative	51 hrs later iodin negative
Pe 14591	?	KI grs XV t i d for 1 mo	Iodin negative	10 da later iodin negative
Kn 14248	Cerebrospinal syphilis	KI grs XXX t i d for 11 weeks	Iodin negative	21 hrs later iodin negative

Study 2—Here observations were made by Dr Barbat and myself on a private patient, Bl whose trouble was diagnosed as tabes He was given potassium iodid by mouth in gradually increasing doses from 15 to 40 grains at the end of six days and then 250 grains, by mouth, in a single dose Tap 1 was made eighteen minutes later and Tap 2 after twenty-four hours A week without medication followed, and then 240 grains of sodium iodid given, by mouth, in a single dose, and Tap 3 made thirty minutes later, 30 c c of fluid being withdrawn No iodin was found in any of the specimens

On Tap 1 I used the same test as in Study 1

Tests of a portion of Tap 2 were made by T Brailsford Robertson professor of biochemistry in the University of California and in the following manner A portion of the fluid was evaporated to dryness and then fused with sodium hydroxid, the fused mass was taken up in a few cubic centimeters of water and acidified with hydrochloric acid, chlorin gas was passed through the fluid until the latter was a deep yellow in order to set free iodin from any iodids present, this fluid was then divided into two portions, A and B

A was shaken with a drop or two of carbon bisulphid No color appeared

B was shaken up with chloroform, and the chloroform layer on separating was evaporated to dryness the residue taken up in potassium iodid solution and tested with starch solution No color was given Iodin controls gave positive tests

Another portion of Tap 2 was examined by Dr Bennett of the Department of Physiology of the University of California This portion was evaporated to dryness, fused with potassium carbonate and potassium nitrate, the residue taken up in water, starch paste added and the solution electrolyzed with fine pointed platinum electrodes A control containing 0 01 per cent of iodin gave a blue point on one of the electrodes in a few seconds, but the specimen gave a negative result

The test on Tap 3 was made by Dr Barbat and myself by the electrolytic method, and no iodin was found

CONCLUSIONS

1 In the series of cases examined, regardless of the amount of iodin administered by mouth, no iodin or compounds of iodin were found in the spinal fluid

2 Either iodin compounds do not pass the ependymal cells of the choroid plexus in any measurable quantity, or such iodin as does reach the spinal fluid is very rapidly fixed in the tissues

209 Post Street

Therapeutics

MOUTH INFECTIONS

Only recently has the part played by the mouth and its adjacent structures in the production of a great many pathologic processes been demonstrated The mouth, including the teeth, gums and tonsils, affords a broad surface and readily accessible means of entry for various pathogenic micro-organisms It is not always essential that visible evidence should be present in the mouth of the focus producing a systemic infection, to prove that the portal of entry was in the mouth The focus may be discovered only by careful examination with the Roentgen ray A portal of entry may be present and not directly demonstrable in any way, for example, when the bacteria enter the lymph or blood stream by way of the tonsils That a focus does exist in the mouth and that it is directly responsible for the pathologic condition has been repeatedly proved by removing the source of infection or by treatment with a proper autogenous vaccine made from bacteria isolated from the pus at the site of the focus Such treatment often causes the disappearance of the systemic pathologic condition

Within the mouth there are various channels through which bacteria may enter the system the tonsils, gums, roots of the teeth, and by way of the esophagus to the stomach and intestine That the tonsils play an important part in various infections has been demonstrated by many In a careful bacteriologic and pathologic study of the bacteria removed from the tonsils in various diseases, and injection of these bacteria into animals, Davis[1] was able to reproduce many of these conditions He studied 113 hypertrophied tonsils from patients with endocarditis, nephritis, arthritis and simple tonsillar cases, isolating the organisms, most of which were streptococci, and injecting them into animals and producing a corresponding condition The beneficial effects of tonsillectomy, he thinks, furnish the best evidence that the infected tonsils are concerned in the production of arthritic, cardiac, renal and other clinical conditions Davis[2] again in 1913, in a study of forty-two cases of arthritides, could trace the condition to the diseased tonsils Capps[3] summarized 1,400 cases of epidemic streptococcic sore throat, and mentions several complications, such as otitis media, erysipelas, arthritis, endocarditis and myocarditis There were also pleurisy and pneumonia, while peritonitis that occurred resulted in many deaths

In this connection, the work of Rosenow[4] proved that many ulcers of the stomach are associated with tonsillar infections He obtained streptococci from some of these ulcers, and after injecting cultures of these organisms into animals, he was able to observe gastric ulcers in them Stone[5] pointed out the relation between enlarged cervical glands and foci of infection in the tonsils, even though the tonsils may not be hypertrophied or inflamed The short and direct communication between the tonsils and the lymphatics is responsible for this In this way there may also result tuberculous adenitis

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[1] Davis Jour Infect Dis 1912 x 148

[2] Davis D J Chronic Streptococcus Arthritis The Journal A M A Sept 6 1913 p 724

[3] Capps J A Epidemic Streptococcus Sore Throat—Its Symptoms Origin and Transmission The Journal A M A Sept 6 1913 p 723

[4] Rosenow E C The Production of Ulcer of the Stomach by Injection of Streptococci The Journal A M A Nov 29 1913 p 1947

[5] Stone Boston Med and Surg Jour 1912 clxvii 539

That the mouth by way of the esophagus directly offers an entry for bacteria to reach the stomach is evident The various bacteria are carried in from the dust that gets into the mouth, from the foods, and from infected places in the mouth, particularly the gums Mayo[6] says that Smithies, in a "microscopic examination of gastric contents from 2,406 different individuals with 'stomach complaint' (dyspepsia, indigestion and the like), showed that irrespective of the degree of acidity of such gastric extracts, bacteria were present in 87 per cent," and that while the proliferation of the pus-producing organisms, such as the streptococci and staphylococci, were retarded in the gastric juice, bacilli seemed to thrive

Perhaps equally common as a source of infection are the teeth The open, exposed, ulcerated or decayed tooth is not always the worst in this respect More harm may be done by the heavily crowned, capped and bridged teeth, under the poorly fitted margins of which the bacteria flourish and manage either to enter the lymphatics or to send their toxins into the system There may also be a tiny abscess situated deep down at the root of the tooth In these cases local manifestations of a focus in the teeth may be entirely lacking, and may be demonstrable only by the Roentgen ray These so-called "blind abscesses" may remain dormant a long time Ultimately they open into the mouth by way of the sinus Often they lead into larger abscesses in the bone, in which toxins are produced, giving rise to septic conditions Haskin[7] believes that such abscesses, with their subsequent complications, are even more dangerous than the infections resulting from pyorrhea alveolaris He describes a series of cases among which were complications such as gastric ulcer, anemia and neuritis It is probable that, depending on the nature of the organism in the abscess, there may result any of the complications so often resulting from tonsillar affections Rosenow[8] states that these foci are common in patients who for years have suffered from arthritis, neuritis, appendicitis, ulcer of the stomach, goiter, etc, and that persons with perfect health are, as a rule, free from sources of infection in relation to the teeth

The treatment of the complications secondary to the focus within the mouth consists first of all in removing the mouth infection Careful examination should be made of the tonsils and teeth, and if the tonsils are found to be hypertrophied or inflamed, even without visible signs of any abscess, they may be removed Often the abscess may be located deep in one of the crypts If any visible pus is present, it would be advisable to obtain a culture of the bacteria contained in it Normal tonsils should not be removed When the tonsils appear normal even though there may be no history of tooth involvement, the teeth, nevertheless, should be carefully examined Poorly fitting crowns should be taken off, and often underneath them may be found the cause of the trouble Many cases of arthritis have been cured by a correction of the dental work of the mouth, removal or filling of ulcerated areas, and insertion of proper bridge work Roentgenograms may locate a blind or apical abscess when least suspected When such has been found, the tooth should be extracted Often it is possible to drill into the abscess and in this way offer drainage for the pus In this way also the tooth may be saved This, however, can best be left to the judgment of the dentist

Besides the removal of any foci, a mouth wash may be indicated There are many mouth washes on the market under various trade names Many of these contain the same ingredients and vary but slightly in their composition from those described in either the Pharmacopeia or the National Formulary The best mouth washes are those that are alkaline, antiseptic and astringent Some of the simpler antiseptic and astringent mouth washes are strong solutions of glycerin or of alcohol Hydrogen peroxid, one part, to three parts of water is a good wash For ordinary cleansing purposes sodium bicarbonate, in water, will serve the purpose

Cleanliness of the teeth plays an important part in the asepsis of the mouth By regular and frequent brushing of the teeth with a good, fairly stiff toothbrush and a simple tooth powder or tooth paste, the accumulation of tartar on and between the teeth may be to some extent prevented In conjunction with this brushing of the teeth, gargling with a mouth wash will aid in cleaning the mouth Equally if not more important in the care of the teeth is the periodic visit two or three times a year to a dentist, that tartar may be removed, that caries of the teeth may be early treated, and that the condition of the gums may be noted and pus pockets early discovered

PREVENTION

Prevention of suppuration or other infection in the mouth is of the greatest importance all through life The following suggestions for preventive measures may be of value

1 There should be inspection of children's teeth in schools

2 Every infected area in the mouth must be treated and eradicated if possible as soon as discovered

3 The public should be taught that a bad tooth or a diseased gum or tonsil is serious, and neglect of such a condition may cause an incurable disease

4 The mouth of every patient should be examined as part of the physical examination

5 Roentgenograms of suspected gums or jaws should be taken, and if advisable, a culture from the pus or secretions of the infected region should be made

6 There should be cooperation of the physician with the dentist to decide on what is best for the correction of mouth defects, whether certain teeth should be filled or pulled, or otherwise treated, and just what is the best treatment for a diseased gum or tonsil Neither physician nor dentist is infallible, and both should recognize that cooperation is best for the patient

(To be continued)

The Obvious Treatment —An old story concerns a patient who seeking free advice met his physician one frosty morning and said Doctor what do you do when you have a cold?' The physician craftily answered, I cough His answer is as obvious as the treatment for pruritus recommended by Dr Andrew Borde a physician who lived from 1500 to 1549 Dr Borde admitted that itching of the skin was altogether beyond the power of his treatment He says

> This I do advertise every man for this matter (ailment) to ordeyne or prepare a good paire of nayles to cracke (scratch) and clawe and to rent and teare the skynne and the fleshe and beware he advises his patients reverberate not the cause inwards with no oynment and clawe not the skyn with fyshye fyngers but washe the handes to bedwards (at bed time)

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[6] Mayo C H Mouth Infection as a Source of Systemic Disease The Journal A M A Dec. 5 1914 p 2025

[7] Haskin New York Med Jour May 16 1914 p 979

[8] Rosenow E C Mouth Infection as a Source of Systemic Disease The Journal A M A Dec 5 1914 p 2026

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SATURDAY, NOVEMBER 4, 1916

THE TREATMENT OF DIPHTHERIA CARRIERS

The recognition of human "carriers" of disease, who do not themselves manifest symptoms of the infection which they harbor, has brought new problems to be solved To rid society directly of the carrier infringes perhaps on the personal liberty and happiness of an innocent individual For the present, therefore, he must be subjected to such treatment as seems likely to subdue the organisms which he unwittingly distributes Various proposals have been made for ridding diphtheria carriers of the offensive germs The administration of diphtheria antitoxin has not proved successful Local measures consisting of direct treatment of the areas of suspected invasion, notably in the nasopharyngeal passages, with sprays, gargles, inhalants and comparable devices, are at best doubtful in their effects Antagonistic introduction of bacteria in the form of cultures of staphylococci lactic acid bacilli and others has had its vogue Insufflation with kaolin has also been championed[1] for the removal of bacteria from the mucous membranes

A preliminary requisite for adequate treatment of persistent diphtheria carriers would seem to be the discovery of the precise location of the bacilli of the disease The growing evidence of the involvement of the tonsils, the crypts of which furnish effective spots for the multiplication of the micro-organisms,[2] has found corroboration in recent researches[3] The microscopic examinations of the tonsils or tonsillar crypts of carriers have pointed quite clearly to the presence of what are most probably diphtheria bacilli, in six out of seven cases examined When there were lesions, as when the epithelium of the surface of the tonsil was necrotic, bacilli were found to multiply on the surface as well as in the crypts These facts contribute further to the explanation of the disappearance of the bacilli and the failure to obtain positive cultures from the throat in many, though not all carriers, after tonsillectomy By this operation an important focus of infection in which the micro-organisms have lodged and multiplied has doubtless often been removed It must not be overlooked, however, that in further instances the bacteria have probably continued to grow in some place other than the tonsils or adenoids

Attempts have also been made to increase the activity of the leukocytes in the pharyngeal and nasal secretions of diphtheria carriers According to Tunnicliff,[4] the phagocytic power of their blood is increased, but at the same time the nose and throat may contain large numbers of leukocytes not engaged in phagocytosis, diphtheria bacilli being found outside of the leukocytes Efforts to increase the activity of these leukocytes by the use of normal serum, leukocytic suspensions, and a variety of drugs (calcium chlorid, salicylate, lactic acid, magnesium chlorid) were unsuccessful, although these substances are found to promote phagocytosis in the laboratory

THE RIGHT AND WRONG OF MAKING EXPERIMENTS ON HUMAN BEINGS

To heal the sick and to prevent disease and death are the services to society to which the physician devotes himself Just so far as he is capable of performing these functions, he is under obligation to perform them But the ability of medical men to cure or check disease is often limited because the nature of the disease and suitable methods of treating it are still unknown On every side the effect of increased knowledge in giving increased power is manifest Greater knowledge is certain to yield greater ability to restore the sick to health Again, just so far as the physician is capable of doing so, he is as much under obligation to secure further knowledge and to diffuse it as he is under obligation to apply his skill to the individual in distress This duty of learning is the warrant everywhere for the painstaking labors of the medical investigator, whether he is in the laboratory experimenting on animals, or in the hospital thoroughly and critically studying his patients

The duty of learning, the duty of making advances in diagnosis and treatment, is certain to involve the application of new methods or new medicaments Fortunately, observations which can be made on animals offer reasonable assurance as to the safety of new procedures before they need to be tried on man If a promising mode of diagnosis or treatment has been carefully worked out on lower animals, there appears to be no ethical objection to applying it to a human being who is in distress when it is reasonable to believe that its application would be beneficial Devotion to the duty of learning, however, may tempt investigators to make tests on their patients without due consideration, tests perhaps more likely to be valuable to others than to the person on whom they are made Or procedures may have mixed values, in part beneficial to the patient, in part beneficial to his fellows These situations raise an important ethical question To what limit is the testing on human beings of a previously untried medical agency justifiable?

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[1] Hektoen L and Rappaport B The Use of Kaolin to Remove Bacteria from the Throat and Nose THE JOURNAL A M A June 12 1915 p 1985

[2] Friedberg S A Removal of Tonsils and Adenoids in Diphtheria Carriers THE JOURNAL A M A March 11 1916 p 810 Ruh H O Miller, M J and Perkins R G Studies on Diphtheria II The Treatment of Diphtheria Carriers by Tonsillectomy ibid March 25 1916 p 941 Albert Henry The Treatment of Diphtheria Carriers ibid Sept 27 1913 p 1027

[3] Brown Mary W Diphtheria Bacilli in Microscopical Sections of Tonsils from Diphtheria Carriers Jour Infect Dis 1916 xix, 565

[4] Tunnicliff Ruth Observations on Phagocytosis and Leukocytic Activity in Diphtheria Carriers Jour Infect Dis 1916 xix 97

Just because an operation is a minor one and is very likely to be harmless, there is danger of assuming that the new knowledge to be obtained from testing it justifies the test, even without the consent of the person on whom it is to be tried Such an assumption is a serious error There is no more primitive and fundamental right which any individual possesses than that of controlling the uses to which his own body is put Mankind has struggled for centuries for the recognition of this right Civilized society is based on the recognition of it The lay public is perfectly clear about it Any hospital official or physician known to commit or to allow violation of the sacredness of the person becomes at once the object of hostility And the law, as an expression of public conscience, declares that deliberate injury done to the body of another is an assault, and provides severe punishment for it Society as now constituted will obviously not countenance any operation performed for the satisfaction of the operator or for the assurance of the investigator, whether or not for the immediate benefit of others, unless the consent of the person on whom the operation is to be performed has previously been obtained

No doubt the justice of this ethical standard is generally recognized in the medical profession, and the spirit of the Hippocratic oath shows that from the earliest times this primary regard for the patient has been the core of the physician's honor Occasionally, however, reports appear which indicate that investigators have made tests on human subjects which possibly may not have been intended directly for the benefit of the person concerned In some instances it has not been clear that the consent of the subject was obtained In other instances, in which dependents have been subjects, the superintendent of the hospital or asylum has been responsible for his charges, and it has not been clear whether he has given his consent or secured the sanction of relatives It is clearly the duty of the physician to secure the consent of the patient or of the patient's guardian in case the patient himself is not capable of granting consent before performing any mutilating operation The medical profession is certainly not called on, in any sense, to support the physician who transgresses the elementary principles of ethics

Especially are the reputation and esteem of medical men endangered by any failure on their part to stand firmly for the fundamental right of the individual to respect for his own person For the sick commit themselves to the care of the physician and surgeon helplessly and with implicit trust that their welfare alone will be considered Any practitioner or investigator, no matter how laudable his motives, who fails in scrupulous regard for this trust is liable to do incalculable harm by rousing suspicions, fears and disrespect as to the character of medical service

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Independent of any theoretical considerations as to the precise details of the coagulation process in blood, it has been established that contact with certain tissues, or addition of certain tissue extracts to blood plasma, leads to clot formation In 1912 Howell[1] showed that the active substance concerned in this facilitation is presumably a phosphatid having the general properties of kephalin Practical applications of this have already been reported For example, Hirschfelder[2] of the University of Minnesota has described how an active thromboplastic preparation can be made from an ether extract of ox brain The residue of such an extract or a weak emulsion of it in salt solution, when placed on an oozing surface of tissue stops bleeding quickly and gives a very clean field for operation Hemorrhages from bone, kidney, muscle and connective tissue, prostate and other glands are said to be easily controlled by this means Hemorrhage from a cut artery obviously cannot be controlled so easily, because the force of the blood pressure pushes away the incipient clot as fast as it can be formed In a pitted wound however, such as occurs in warfare or when the femoral artery is cut through in Scarpa's triangle, and the pitted wound fills with blood,

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[1] Howell W H Am Jour Physiol 1912 xxxi 1

[2] Hirschfelder A D Brain Lipoid as a Hemostatic Science Aug 18 1916 p 251 Brain Lipoid New and Nonofficial Remedies The Journal A M A Aug 5 1916 p 437

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SATURDAY, NOVEMBER 4, 1916

THE TREATMENT OF DIPHTHERIA CARRIERS

The recognition of human "carriers" of disease, who do not themselves manifest symptoms of the infection which they harbor, has brought new problems to be solved To rid society directly of the carrier infringes perhaps on the personal liberty and happiness of an innocent individual For the present, therefore, he must be subjected to such treatment as seems likely to subdue the organisms which he unwittingly distribute Various proposals have been made for ridding diphtheria carriers of the offensive germs The administration of diphtheria antitoxin has not proved successful Local measures consisting of direct treatment of the areas of suspected invasion, notably in the nasopharyngeal passages, with sprays, gargles, inhalants and comparable devices, are at best doubtful in their effects Antagonistic introduction of bacteria in the form of cultures of staphylococci, lactic acid bacilli and others has had its vogue Insufflation with kaolin has also been championed[1] for the removal of bacteria from the mucous membranes

A preliminary requisite for adequate treatment of persistent diphtheria carriers would seem to be the discovery of the precise location of the bacilli of the disease The growing evidence of the involvement of the tonsils, the crypts of which furnish effective spots for the multiplication of the micro-organisms,[2] has found corroboration in recent researches[3] The microscopic examinations of the tonsils or tonsillar crypts of carriers have pointed quite clearly to the presence of what are most probably diphtheria bacilli, in six out of seven cases examined When there were lesions, as when the epithelium of the surface of the tonsil was necrotic, bacilli were found to multiply on the surface as well as in the crypts These facts contribute further to the explanation of the disappearance of the bacilli and the failure to obtain positive cultures from the throat in many, though not all carriers, after tonsillectomy By this operation an important focus of infection in which the micro-organisms have lodged and multiplied has doubtless often been removed It must not be overlooked, however, that in further instances the bacteria have probably continued to grow in some place other than the tonsils or adenoids

Attempts have also been made to increase the activity of the leukocytes in the pharyngeal and nasal secretions of diphtheria carriers According to Tunnicliff,[4] the phagocytic power of their blood is increased, but at the same time the nose and throat may contain large numbers of leukocytes not engaged in phagocytosis, diphtheria bacilli being found outside of the leukocytes Efforts to increase the activity of these leukocytes by the use of normal serum, leukocytic suspensions, and a variety of drugs (calcium chlorid, salicylate, lactic acid, magnesium chlorid) were unsuccessful, although these substances are found to promote phagocytosis in the laboratory

THE RIGHT AND WRONG OF MAKING EXPERIMENTS ON HUMAN BEINGS

To heal the sick and to prevent disease and death are the services to society to which the physician devotes himself Just so far as he is capable of performing these functions, he is under obligation to perform them But the ability of medical men to cure or check disease is often limited because the nature of the disease and suitable methods of treating it are still unknown On every side the effect of increased knowledge in giving increased power is manifest Greater knowledge is certain to yield greater ability to restore the sick to health Again, just so far as the physician is capable of doing so, he is as much under obligation to secure further knowledge and to diffuse it as he is under obligation to apply his skill to the individual in distress This duty of learning is the warrant everywhere for the painstaking labors of the medical investigator, whether he is in the laboratory experimenting on animals, or in the hospital thoroughly and critically studying his patients

The duty of learning, the duty of making advances in diagnosis and treatment, is certain to involve the application of new methods or new medicaments Fortunately, observations which can be made on animals offer reasonable assurance as to the safety of new procedures before they need to be tried on man If a promising mode of diagnosis or treatment has been carefully worked out on lower animals, there appears to be no ethical objection to applying it to a human being who is in distress when it is reasonable to believe that its application would be beneficial Devotion to the duty of learning, however, may tempt investigators to make tests on their patients without due consideration, tests perhaps more likely to be valuable to others than to the person on whom they are made Or procedures may have mixed values, in part beneficial to the patient, in part beneficial to his fellows These situations raise an important ethical question To what limit is the testing on human beings of a previously untried medical agency justifiable?

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[1] Hektoen L and Rappaport B The Use of Kaolin to Remove Bacteria from the Throat and Nose The Journal A M A June 12, 1915 p 1985

[2] Friedberg S A Removal of Tonsils and Adenoids in Diphtheria Carriers The Journal A M A March 11 1916 p 810 Ruh H O Miller M J and Perkins R G Studies on Diphtheria II The Treatment of Diphtheria Carriers by Tonsillectomy ibid March 25 1916 p 941 Albert Henry The Treatment of Diphtheria Carriers ibid Sept 27 1913 p 1027

[3] Brown Mary W Diphtheria Bacilli in Microscopical Sections of Tonsils from Diphtheria Carriers Jour Infect Dis 1916 xix 565

[4] Tunnicliff Ruth Observations on Phagocytosis and Leukocytic Activity in Diphtheria Carriers Jour Infect Dis 1916 xix 97

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[1] Howell W H Am Jour Physiol 1912 xxxi 1

[2] Hirschfelder A D Brain Lipoid as a Hemostatic Science Aug 18 1916 p 251 Brain Lipoid New and Nonofficial Remedies The Journal A M A Aug 5 1916 p 437

With such evidences of possible usefulness in practical surgery, it has become doubly important to identify the facilitating agent McLean[3] has therefore attempted to learn, in the physiologic laboratory of the Johns Hopkins University, whether the thromboplastic effects attributed to kephalin is a property of the substance itself, or the manifestation of some adherent impurity, and, further, whether it is shared by other related phosphatids in any degree The evidence presented by him indicates that "impurities" will not account for the thromboplastic function Not only brain kephalin, but also the comparable substance isolated from the heart and the liver exhibit the same reaction Finally, the other phosphatids that have been described,[4] such as purified lecithin, cuorin, heparphosphatid and sphingomyelin, have no thromboplastic action These facts give kephalin a unique physiologic significance

THE RELATION OF PROTEINS TO MILK PRODUCTION

The recent contributions to our knowledge of the chemical differences between proteins are beginning to manifest themselves in many ways in the study of nutrition The researches of Osborne, Mendel and others in this country have centered attention on the indispensability of certain amino acids for the growth of new tissues The value of proteins for the purposes of constructive metabolism is thus closely connected with the type and quantity of these essential amino acids which they yield The failure of "incomplete" proteins like gelatin from animal sources or the zein of corn or the gliadin of wheat to promote satisfactory nutrition for growth is today readily explained, thanks to the pioneer researches of the past few years, on the basis of the lack of needed constructive nitrogenous units in such proteins A reviewer has recently summarized the situation by stating that investigations of this type into the biochemical deportment of the protein cleavage products will undoubtedly lead ultimately to the assignment of more or less specific functions to the various amino acids, and hence will indirectly indicate the relative efficiency of this or that protein in bringing about a desired result in nutrition[5]

In more than a superficial sense the function of the mammary gland resembles the phenomena of growth It is concerned with the construction of new products of a very specific and unalterable character from such pabulum as is brought to the secreting structure by the circulation The question arises, therefore, whether the gland is independent of the quality of the nitrogenous units thus furnished to it for the manufacture of milk, whether it can synthesize almost from the elements, as it were, the proteins characteristic of its secretion, or whether, like the rest of the body about to build up new tissue, the mammary structures are dependent on a qualitatively and quantitatively suitable supply of amino acids as constructive units

Hart and Humphrey[6] of the University of Wisconsin have studied this problem in the case of the milk-producing cow Their results indicate that the quality of the proteins is an important factor in maintenance and production, and that the synthetic powers of the mammary gland will not compensate for deficiencies in protein structure In an earlier series of experiments, it was found that milk proteins had an efficiency for milk production and tissue restoration of about 60 per cent, in comparison with an efficiency of only 40 and 36 per cent, respectively, for the corn and wheat grain proteins On certain otherwise comparable rations, for example, positive nitrogen balances were maintained with milk proteins for the production of as high as 35 pounds of milk a day, but negative balances resulted when the proteins were derived from the corn or wheat grain Latterly, in comparison of the proteins of gluten feed, oil meal, distillers' grains, casein and skim milk powder for milk production, the relative efficiency of these protein concentrates ranged in essentially the order mentioned, the milk itself being the most effective source of milk protein

These facts gained from the laboratories of animal nutrition are surely not without immediate significance for the human mammary functions The new experimental observations bear out the value of the empirically accepted custom of supplying milk liberally in the diet of lactating women So long as the other preferable protein sources in the human dietary are not specifically known, it becomes essential to make the protein supply in the food liberal enough to prevent any shortage of desired amino acid units of any sort whatever This is the more important because such deficiencies do not always reveal themselves promptly in alterations of the supply of milk from an underfed or improperly nourished person The forces of maternity in maintaining milk production at a high level for a long time prevent any failure of milk supply even where it might be expected, for when the food does not furnish what is requisite, the individual derives the necessary constructive units from its own tissues Improper food during a period of lactation may thus bring about emaciation or partial depletion of muscular tissue without a symptom of the lack being revealed by any impoverishment of the milk flow for some time Hence any consideration of the efficiency of proteins from different sources for milk production must take into account not only the protein secreted in the milk but also that stored or destroyed in the rest of the organism, for milk production at the permanent expense of catabolizing tissues is far from an ideal situation

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[3] McLean J The Thromboplastic Action of Cephalin Am Jour Physiol 1916 xli 250

[4] The Lecithins of Milk editorial THE JOURNAL A M A Nov 13 1915 p 1734 Pure Lecithin April 1 1916 p 1029

[5] Underhill F P The Physiology of the Amino Acids New Haven Yale University Press 1916 p 158

[6] Hart E B and Humphrey G C The Relation of the Quality of Proteins to Milk Production, Jour Biol Chem 1915 xxi 239 Further Studies of the Relation of the Quality of Proteins to Milk Production ibid 1916 xxvi 457

RHUS POISONING

The discussion of the etiology and mechanism of poisoning through the agency of the poison oak (*Rhus diversiloba* T and G) and its near relatives, poison ivy (*Rhus toxicodendron* L), and Japanese poisonous sumac (*Rhus vernix* L), in recent issues of The Journal,[1] seems to indicate an especial interest in this subject It becomes apparent that some believers in the toxicity of these plants postulate the poison to be of a gaseous nature, so that it can easily be transmitted without contact with parts of the plant Some assert the probability of a bacterial nature of the poison in order to explain the often subtle and otherwise apparently inexplicable spread of the signs of affection with rhus intoxication Others maintain that contact is necessary and that the toxic agent is unquestionably a chemical substance of defined properties

A series of experiments, recently reported by McNair[2] from the Rudolph Spreckels Physiologic Laboratory of the University of California, establishes a number of facts concerning the active principles of poison oak McNair, to whom we already owe chemical studies previously referred to on the nature of oak poison,[3] has tried some crucial experiments to determine or exclude certain of the possibilities of transmission of rhus poisoning still in doubt These points were already known for poison ivy and poison sumac The nonbacteriologic nature of the toxic substance, its nonvolatility, its resinous nature, its absence in the pollen and plant hairs, and its chemical properties were determined by the methods previously employed by other investigators in their studies of the poisonous constituents of the related plants In fact, the results indicate that the toxic agents in the several plants are identical or very closely related

The oft repeated assertion that poisoning may result from exposure to smoke from burning stems is experimentally verified Smoke from the heated leaves causes dermatitis if blown on the wrist If, however, the smoke is filtered through glass wool, it will no longer produce toxic effects, showing that smoke is only a mechanical carrier of the poison

The part of the plant to be feared is the resinous sap This sticky sap, exuding from all parts of an injured plant, comes into contact with hands or other exposed portions of the body, and may even be carried indirectly on clothing, tools, insects, smoke, etc , to the skin of persons far from the actual neighborhood of the plant, giving rise to those mysterious "recurrent" cases of oak poisoning Sap thus carried loses its toxic properties by oxidation, the rate of loss being most rapid when the temperature is blood heat and the atmosphere humid The irritant in the sticky resinous sap slowly diffuses through sudoriparous and sebaceous ducts, hair follicles, and through the skin itself where it is thin and delicate

A suggestion has been advanced that possibly insects carry poison from plant to person This McNair believes cannot from present evidence, be denied, but it is doubtful whether severe cases of rhus dermatitis can be caused by the small amount of rhus poison that an insect might carry

The principal lesions of dermatitis venenata from poison oak have been described by White[4] McNair adds to the symptoms already recorded an accompanying leukocytosis (in severe cases blood counts frequently giving more than 12,000 leukocytes to the cubic millimeter), and constitutional disturbances, such as fever, coated tongue, loss of appetite, constipation, and a trace of albumin in the urine (he records one case in which an acute nephritis developed) As diagnosis is occasionally difficult, certain peculiarities may be noted, distinguishing it from eczema and herpes Oak poisoning frequently begins between the fingers, and is markedly acute in character, with swelling and often large vesicles and blebs, the exudate from which is nontoxic It occurs in sharply defined patches, elongated streaks, and other irregular shapes corresponding with the original area of contact It does not follow the nerve trunks It seldom attacks the scalp or the inside of the hands The areas of the skin to which the poison has been conveyed from the original site of contact are usually less affected It may subside in from four to six days, depending on the amount of the irritant and the sensitiveness of the skin

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[1] The Poisonous Principle of Poison Oak editorial The Journal A M A. Aug 5 1916 p 441, Poison Oak and Poison Ivy Queries and Minor Notes Sept 2 1916 p 763 Etiology of Rhus Poisoning Queries and Minor Notes Oct. 4 1916 p 1175

[2] McNair J B The Transmission of Rhus Poison from Plant to Person, Jour Infect Dis. 1916 xix 429 The Pathology of Dermatitis Venenata from Rhus Diversiloba ibid 1916 xix 419

[3] McNair J B Jour Am Chem Soc. 1916 xxxviii 1417

[4] White Dermatitis Venenata 1887

Paraffin as a Petrol Substitute —In view of the abnormally high price of petrol (gasoline) in England and the difficulty of obtaining it an article in *Engineer*, 122, No 3158 describes a specially constructed vaporizer and carbureter by the use of which paraffin may be substituted for petrol in motor-driven vehicles A small tank is fitted for the supply of petrol for starting the engine, and paraffin is used after the vaporizer has become sufficiently hot The carbureter has two float chambers one for petrol and the other for paraffin and has a main jet and two pilot jets The sprayed paraffin enters the vaporizer, which consists of two concentric tubes, between which the exhaust gases from the engine pass and thus heat the walls of the inner tube The latter tube contains a worm which causes the mixed air and paraffin to whirl as the mixture traverses the inner tube There is thus a tendency to throw an unvaporized paraffin into contact with the hot walls where vaporization is completed

Current Comment

THE TOXICITY OF THE PIGMENT OF CERTAIN FOODS

The controversy over the bleaching of flour[1] with chlorin has many issues, but on one point all agree, namely, that the transformation of the dark coloring matter from the wheat to a "pure" white does appeal to the esthetic sense Casting aside for the moment the problem of its effect on health, it cannot be denied that it allows a poorer grade of flour to be placed on the market at a fancy price, since the public is thus prevented from estimating the value by the color The character of the pigment of the flour has been shown to be identical with the coloring substance of the carrot, which had previously been isolated and given the name "carotin" or, as Monier-Williams[2] has more recently termed it, "carrotene" The relative amount of carotin in flour is much smaller than in carrots Wells and Hedenburg[3] of the University of Chicago have been conducting an investigation on the effects of chlorin on flour, and in this connection undertook to determine the possible toxicity of the pure pigment matter, both bleached and unbleached, but using carrot as the source of supply of the carotin The purified pigment, in olive oil, was injected intraperitoneally into guinea-pigs (weighing about 250 gm each) in an amount of 0 2 gm , this is equivalent to the amount of carotin in 200 kg of flour In addition, intradermic tests, such as used by Corper for the study of local toxicity, were made The authors concluded that "even in relatively very large doses carotin, whether in its natural state or saturated with chlorin, is almost entirely devoid of toxicity" Since carotin is distributed throughout all animal bodies, derived in the main from food, these experiments would seem to indicate that no deleterious effects would arise from any such quantities as could accumulate in the tissues

SCIENCE NOTE

Last week a Sporting Note appeared in this department relative to the alleged secret of Ty Cobb's baseball success — "Nuxated Iron '[4] Those of our readers into whose hands some not-too-particular newspapers may happen to fall are, doubtless, familiar with at least some of the claims made for the latest "patent medicine" sky-rocket, "Nuxated Iron" It was "Nuxated Iron" that "gave Ty Cobb such tremendous strength and vitality after he was so weakened and all run down" Mr Jess Willard says "Take Nuxated Iron if you want plenty of 'stay-there' strength and endurance and health and muscles like mine" Dr Ferdinand King, according to the "Nuxated Iron" advertisements, prescribes this latest wonder Dr King, we are told, is a "well-known New York physician and author" He should be well known from the picture that appeared in his double-column advertisements in which, in "forty-eight point" black type, he appealed to the masculine sinners of New York "I Guarantee To Cure the Following Male Diseases" Further continuing our scientific investigation of the literature, we learn from the *Police Gazette* and similar authorities that "Nuxated Iron" puts the "Most Astonishing Youthful Power Into the Veins of Men" and is in fact "A Wonderful Discovery which Promises to Mark a New Era in Medical Science" For fear that some of The Journal readers may not take this bibliography with sufficient seriousness, we hasten to call attention to the full-page advertisements of "Nuxated Iron" that have been running in the New York *Medical Record* Here we learn that the preparation "as a tissue builder and tonic is well worth the careful investigation of every physician who wants results" To save our readers the trouble of further search Up to the time of going to press, the New York *Medical Record* has had no editorial on this latest therapeutic marvel

THE REGULATION OF BLOOD VOLUME

Dilution of the blood is usually followed by diuresis as one of the factors in securing a return of the organism to its normal condition Because of the rapidity of the regulatory response it is not easy, even with the exclusion of the kidney cooperation, to maintain an excessive blood volume for any length of time Some of the problems here concerned were recently discussed in The Journal[1] Several years ago, Fischer and Hogan[2] called attention to the fact that intravenous injections of gelatin solutions are not diuretic and that, therefore, high arterial pressure is likely to be maintained for a longer time after such injections than after introduction of ordinary saline solutions It was consequently suggested that gelatin-containing solutions might advantageously replace ordinary saline solutions for injection in cases of shock in which it might be desirable to keep the blood pressure high for a considerable period of time[3] The hypothesis on which this suggestion was based concerns the hydrophilic or water-retaining capacity of colloids, such as gelatin It is conceivable that, even if no diuresis occurs, the volume of the blood may be altered, after injection of saline-colloid solutions, by the disappearance of fluid into the tissue reservoir, as commonly happens when simple saline fluids enter the circulation[1] An investigation of this question by Bogert, Underhill and Mendel[4] at Yale University shows, however, that though fluid injected in the form of colloidal solutions containing gelatin may leave the circulation as readily as that in non-colloidal solution, the restoration of the blood volume to normal is as a rule not so prompt after the use of the colloidal solutions The regulation is less efficient There are, however, drawbacks to the introduction of foreign protein into the blood, so that further investigation of the proposed procedure in man seems to be called for before it is adopted as a routine in practice In this connection it may be of some interest to consider the effect on the regulation of blood volume produced by injections of alkaline solutions These have been proposed by Fischer[5] as a means of dehydrating the colloids of the body Bogert, Underhill and Mendel[6] have demonstrated that the addition of alkali, up to 0 4 per cent of sodium carbonate, to injected salt solutions has no apparent effect on the regulation of blood volume either in normal or in nephritic animals The rate at which, and the extent to which, injected fluid leaves the blood vessels is unaffected by the addition of the alkali

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[1] Chlorin Bleached Flour editorial The Journal A M A Nov 28 1914, p 1959 Modern Bread and Deficiency Diseases Current Comment April 22 1916 p 1314

[2] Monier Williams G W Reports of the Local Government Board (Great Britain), Public Health and Medical Subjects Series No 73 1912

[3] Wells H G and Hedenburg O T The Toxicity of Carotin Jour Biol Chem 1916 xxvii 213

[4] See the expose of this patent medicine' in the Propaganda department of The Journal Oct 21 1916

[1] Remote Effects of Nephritis editorial The Journal A M A, Oct 14 1916 p 1164

[2] Fischer M H, and Hogan J J Kolloidchemische Beihefte 1912 iii 385

[3] Hogan J J The Intravenous Use of Colloidal (Gelatin) Solutions in Shock The Journal A M A Feb 27 1915 p 721

[4] Bogert L Jean Underhill F P and Mendel L B The Action of Saline Colloid Solutions upon the Regulation of Blood Volume Studies of the Permeability of Cellular Membranes II Am Jour Physiol 1916 xli 219 Roger and Garnier Arch de med exper 1913 xxv 273 Boycott A E Jour Path and Bacteriol 1914 xviii, 498

THE AUTOMOBILE AS A CAUSE OF POLIOMYELITIS

The newspapers have given an unusual amount of space to the recent epidemic of poliomyelitis, which is remarkable in view of the small number of cases of this disease as compared with epidemics of such diseases as scarlet fever, diphtheria and other exanthems An explanation is to be found in the insidious nature of the disease and its serious after-effects, in addition to the high mortality Naturally there has been a large crop of sensational statements as to its causation and treatment Not the least remarkable is one which has gone the rounds of the press during the past week This paragraph reports a statement to the effect that the epidemicity of poliomyelitis is due to the fumes produced by automobiles As the announcement is alleged to have been made before the American Public Health Association, public opinion may possibly attach undue importance to it under the impression that it is endorsed by that association Of course to maintain such a theory it would be necessary to show that epidemics of poliomyelitis did not occur before the development of automobiles, and that they do not occur now in places in which there is little or no such development Since 1841, when the first epidemic of this disease was reported, though not recognized, in Louisiana, until the present day, a number of these outbreaks have occurred It will be necessary to mention only some which are inconsistent with the theory advanced in the statement referred to Such are an epidemic of forty-three cases in 1877 at Stockholm, an epidemic of from 150 to 160 cases in the summer of 1894, in Otter Creek Valley, Vt, and an outbreak in 1899 in Norway All of these occurred before the development of the automobile industry In 1905 and 1906 epidemics occurred in Norway with a total of 1,053 cases, especially prevalent in the northern part of Norway No one will allege that the northern parts of Norway even now, ten years later, are places where poliomyelitis could, by any twist of the imagination, be attributed to "gases and fumes given off in the atmosphere by the combustion of oils and fluids used in automobiles" *Post hoc, ergo propter hoc* is a familiar fallacy, *ante hoc sed propter hoc* is as novel as it is startling

MEDICAL LICENSURE IN THE UNITED STATES

During the last fifteen or twenty years, medical practice laws in nearly all states have been improved Considering the country as a whole, however, more confusion and inefficiency still exist in connection with medical licensure in the United States than obtain in any other civilized nation Instead of its being a function of the national government, as in other countries, the protection of the public against incompetent and ignorant practitioners of medicine has been left to each individual state And, as a rule, state governments have not appreciated or assumed the responsibility, and have failed to establish a control of medical licensure comparable with that in other countries Either adequate medical practice laws have not been enacted, or competent boards have not been provided to enforce them At the present time, there are six states[1] in which the laws do not give the licensing boards authority to establish standards of preliminary education, or the boards have taken no action, and in fifteen states[2] the laws do not empower the boards to refuse recognition to seriously low grade medical colleges, or the boards have failed to make use of that authority Still greater confusion exists in each of twenty states[3] in which the responsibility for licensing those who are to treat the sick has been divided between from two to five separate and independent boards which of course, makes impossible a high degree of efficiency Even in states in which there are single boards, however there remains much room for improvement Only a beginning has been made in the use of practical and clinical tests and in most states the examinations — written questions and answers — do not test a candidate's real knowledge and ability, but rather encourage quiz-cramming methods of education A satisfactory regulation of the practice of medicine in each state requires (*a*) that there be a single board of medical examiners, the members of which are qualified for the duties devolving on them, (*b*) that the authority to license those who assume the responsibility of caring for the sick shall rest absolutely in this board, (*c*) that this board establish a minimum standard of educational qualifications, in accordance with which every candidate for a license be tested by written, laboratory and clinical examinations With such provision in each state the highest efficiency, taking the country as a whole, requires a close cooperation among state boards through which uniformity of requirements and equally effective methods of examination may be established When these principles have been put into effect, the people of the United States may be assured that those who assume the role of the physician will be as well trained and as skilled as the average of those in other countries

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[5] Fischer M H Oedema and Nephritis Ed 2 New York 1915

[6] Bogert L. Jean Underhill I P and Mendel L B The Influence of Alkaline Saline Solutions upon Regulation of Blood Volume Studies of the Permeability of Cellular Membranes III Am Jour Physiol 1915 xli 229

[1] These states are Florida District of Columbia Idaho Massachusetts South Carolina and Wyoming

[2] These states are Arizona California District of Columbia Idaho Kansas Massachusetts Montana Nebraska Nevada Oregon Tennessee Texas Utah Washington and Wyoming

[3] These states and the number of separate boards in each are as follows Arkansas 5 Connecticut 4 Florida 4 Georgia 2 Idaho 2 Kansas 2 Louisiana 3 Maryland, 2 Michigan 2 Minnesota 2 Missouri 2 Montana 2 Nebraska 2 New Mexico 2 North Carolina 2 North Dakota 3 Pennsylvania 2 Rhode Island 2 South Dakota 2, and Vermont 2

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest such as relate to society activities new hospitals education public health etc)

ILLINOIS

Sanatorium Opened—The formal opening of the Rock Island Municipal Tuberculosis Sanatorium took place October 19

Health Conference—Arrangements are being made by Dr C St Clair Drake, secretary of the state board of health, Springfield, for five district health conferences to be held in the state during the winter

County Sanatorium—Miss Grace Osburn, Chicago, state worker for a tuberculosis sanatorium, is touring Ogle County urging the voters to maintain a sanatorium in and for the county This is the third county in the state to vote on this question

School Vaccination Sustained—The Illinois Supreme Court, on October 25, after considering the case of Wendell against the city of Peoria, rendered a decision upholding the right of the school board to bar from school children who have not been vaccinated

Personal—A farewell dinner was given by physicians of Peoria and vicinity to Dr Elbert W Oliver, October 20 Dr Oliver left October 23 for his new home in Sheridan, Colo ——Dr John J Hanmore, Urban, coroner of Champaign County, who sustained severe injuries when his automobile struck a telephone pole near Gifford, October 16 is still under treatment at the Julia F Burnham Hospital, Champaign, and is said to be improving

Chicago

To Name Hospital for Dr Cotton—The health commissioner has suggested that the Contagious Diseases Hospital be named after the late Dr A C Cotton and has written a letter to Mayor Thompson, asking his approval of the plan

Chinese Doctor to Lecture in Chicago—Dr Yamei Kin, for the last ten years the active head of the Pei Yang Woman's Hospital, Tien Tsin, China, has arrived in Chicago and is visiting the family of Dr E C Dudley Dr Kin has been on a lecture tour through the East and will also be heard in Chicago

Typhoid Fever in Englewood School—After an exhaustive investigation Dr Herman L Bundesen of the city health department announced, October 24, that fifteen cases of typhoid among students of the Englewood High School were due to salad containing typhoid bacteria There have been no further cases of typhoid in the school

Personal—Dr Channing W Barrett was elected president of the Chicago Gynecological Society at its thirty-eighth annual meeting——Maj Gustavus M Blech commanding Field Hospital, No 2, Ill N G , Capt Frederick O Fredricksen of Field Hospital, No 1, and Lieut Ray H Davies, Field Hospital, No 2, have been in Chicago on leave of absence

Hospital Raises Fund—The desired sum of $150,000 for the Norwegian Lutheran Deaconess Home and Hospital, to be erected at 1138 North Leavitt Street, was assured at a final rally held at the Hotel La Salle, September 24, when it was announced that $125,000 had been secured of which $100,000 was in cash and that two citizens of Chicago had guaranteed the remainder

Field Hospital Mustered Out—Field Hospital Company, No 1, commanded by Maj William J Swift, was mustered out of the service of the United States, at Springfield, October 26——Field Hospital, No 2, is still in Springfield, awaiting muster out, which probably will be completed this week This company arrived in Springfield, October 20, from the Mexican border

Fenger Memorial Tablet Unveiled—A copper, hand hammered memorial tablet, in honor of Dr Christian Fenger, was unveiled at the Cook County Hospital, November 3 The presentation address was made by W A Bauer, president of the Dr Fenger Memorial Fund The tablet was accepted on behalf of the hospital by the president of the Board of Commissioners of Cook County, and an address was delivered by Dr Augustus A O'Neill, president of the Chicago Medical Society, on "The Life and Work of Dr Fenger"

Lectures at Children's Memorial Hospital—The auxiliary board of the Children's Memorial Hospital announces a series of lectures, to be given by members of the staff of the hospital The following lectures have been announced November 1, "Progress in Medical Care and Treatment of Infants," Henry F Helmholz, November 8, "Some Medical Problems in the Hospital Care of Children," Samuel J Walker, November 15, "Nature and Management of Contagion," Frank S Churchill, November 22, "Surgery of Infants and Young Children," Coleman G Buford, November 29, "Orthopedic Conditions in Children," Edwin W Ryerson, December 6, "Nursing Methods as Applied to Children," Miss Elsie L Burks, R N The lectures will be given in the lecture room in the Agnes Wilson Building, 735 Fullerton Avenue, on Wednesday morning at 11 o'clock

Cook County Survey of Mental Defectives—Dr Herman M Adler, until recently chief of staff of the Boston Psychopathic Hospital, has resigned that position, and has taken leave of absence for one year from his duties as assistant professor of psychiatry in Harvard University At the request of the City Club of Chicago and of the Illinois Society of Mental Hygiene, he is conducting an investigation of the methods of dealing with insane, feebleminded and psychopathic delinquents in Cook County This work is being undertaken under the auspices of the National Committee for Mental Hygiene and the Rockefeller Foundation, and is a part of the much more extensive survey of mental defectives which is being conducted throughout the country The immediate object of the survey is to determine the facilities for dealing with mental deficiency and delinquency The result of this survey must depend on the interest taken in it by the local authorities Special committees on registration, research, publicity, lectures and affiliation, it is expected, will aid the general committee in its work

INDIANA

Typhoid in Indianapolis—During September, the state board of health reports that there were 185 cases of typhoid fever in Indianapolis, the largest number of cases ever reported in the history of the health department

Hospital Wing Opened—The new wing of the Methodist Episcopal Hospital, Indianapolis, was officially opened, October 12 It is a five-story structure with a roof garden is devoted entirely to private patients, and can accommodate sixty-five patients

New Field Hospital Company Organized—Field Hospital Company No 2, Ind N G , which had recruited at Frankfort, has been mobilized at Fort Benjamin Harrison, and the following officers have been appointed Maj Archibald G Chittick, Frankfort, and Lieuts Martin L Oilar, Russiaville, Ellis Trent Stout, Upland, George D Haworth, Noblesville, and C Herbert Bruner, Greenfield

Personal—Dr Frederick A Douglas, Richmond has gone to Camp Borden, Toronto, Ont , to enter the Canadian Army Medical Service——Dr Robert C Light, Indianapolis, while working over his automobile, injured his left eye so that it had to be enucleated——Dr Jefferson R Hildrup, Windfall, has been appointed a member of the staff of the State Epileptic Village, Newcastle——Dr Floyd A Loop has resigned as medical superintendent of the Wabash Valley Sanitarium, La Fayette——Dr James H F Prentiss, Gary, is reported to have retired from active practice and will make his home in Eustis, Fla——Dr James M Dinnen, Fort Wayne, has been appointed chief surgeon of the Nickle Plate System

IOWA

Southeastern Physicians Hold Meeting—At the annual meeting of the Southeastern Iowa Medical Society, held at

Muscatine, October 19, Fairfield was selected as the place of meeting for next year and the following officers were elected president, Dr Campbell P Howard, Iowa City, vice president, Dr Elbridge H King, Muscatine, secretary-treasurer, Dr Charles F Wahrer, Fort Madison

Hospital Notes—The Fraternity and Charity Society of Dubuque has inaugurated a campaign for the erection of a hospital for the treatment of persons afflicted with tuberculosis It is proposed to erect a building to cost $75,000 The proposition will be submitted to voters at the November election——The furnishing of the New Mary Greeley Memorial Hospital, Ames, is being carried on rapidly and it is expected the hospital will be in operation early next month

Personal—Dr Alden R Hoover after ten years' work in Asiatic Turkey, where he was in charge of a hospital of the American Board of Commissioners for Foreign Missions and later in charge of the American Red Cross work in Constantinople during the Dardanelles campaign, has returned to America and has located in Des Moines, where he will devote himself especially to surgery——Dr Harley L Sayler, city health officer of Des Moines, has gone to Wyoming on a leave of absence——Dr Henry Matthey, Davenport, has returned to America after two years' service with the German army

MARYLAND

Dinner for Dr J P Wade—The friends and associates of Dr J Percy Wade commemorated the twenty-fifth anniversary of his services at the Spring Grove State Hospital by tendering him a dinner at the Baltimore Club on the evening of October 26 Dr Wade was appointed assistant physician at the hospital on Oct 26, 1891, and became superintendent, April 15, 1896

Personal—Dr G Milton Linthicum, captain in the Medical Corps of the Fifth Regiment, is at home on a thirty-day furlough While on the border he has been connected with the new Eagle Pass Hospital——Dr Thomas B McDonald, Cumberland, is in a critical condition from a general breakdown brought on by ill health and the shock he recently suffered when his little daughter died from infantile paralysis and his wife and son also contracted the disease

Infantile Paralysis Quarantine to be Removed—The infantile paralysis quarantine will be raised, November 1, according to a recent report from the city health department, Baltimore Only three new cases have been found in the past two days, and this has been about the average for the last ten days The conclusion reached is that the epidemic stage of the poliomyelitis has been warded off, and that there is no pressing fear of other outbreaks of the disease in the city——There were still a number of cases reported to the state department of health during the week, especially from Garrett County, where there has been an epidemic of the disease, and conditions in the counties are not as favorable as in Baltimore

Municipal Hospital Planned—It has been announced that the United States government will pay Baltimore $176,775 for the quarantine station and the money thus obtained will be devoted to the establishment of a general municipal hospital The plans will be worked out by the board of estimates before it completes the tax levy for 1917 The need of such an institution was emphasized by the outbreak of infantile paralysis The proposed hospital will be for the treatment of patients under the direction of the supervisors of city charities and cared for outside Bay View The supervisors of city charities have contracts with several local hospitals, the cost of the service approximating $95 000 a year The city will formally transfer the quarantine station to the federal government as soon as the report of the appraisers is ratified Dr Thomas L Richardson and the other physicians at the station will be retained by the U S Public Health Service, which will operate the station The city is to have the privilege of sending smallpox patients to the quarantine at a charge of $1 a day per patient

NEW YORK

Medical Library Meeting—The annual meeting of the Utica Medical Library Association was held October 16 and the following officers were elected president Dr Frederick T Owens vice president, Dr William O Weiskotten secretary Dr John Gromann, and treasurer, Dr John W Rayhill

Physician Gives Library to Society—Dr John G Orton, Binghamton has donated his entire medical library, which he has been collecting for sixty years, to the Binghamton Academy of Medicine, and at the meeting of the organization a movement was projected to procure and maintain a building or home for the use of the society to house the library and to include also an assembly hall and laboratory

Tuberculosis Items—The chairman of the plan and scope committee of the board of supervisors of Rensselaer County has received a letter from the state deputy commissioner of public health to the effect that a tuberculosis hospital of 200 beds, with a water supply and sewage disposal system, can be built on the site selected in the county for $150 000——The board of managers of the Oneida County Hospital reported that there are now 144 patients in the institution, and the first of a series of portable houses for tuberculosis patients is being erected on the new addition of the hospital property

New York City

Fordham Medical Alumni Organize—The Fordham Medical School Alumni met, October 27, and organized an association, electing the following officers president, Dr James McSweeney, vice president, Dr John J Sheridan, and secretary-treasurer, Dr Francis X McGovern Father J Tivnan addressed the association on "The Menace of Birth Control"

Society Meetings—The meeting of the New York Academy of Medicine November 2, was held with the cooperation of the section on genito-urinary diseases Dr Hugh H Young of Johns Hopkins Hospital, Baltimore, delivered an address on The Relation of Chronic Infections of the Genito-Urinary Tract to Obscure Internal Disorders"——The second of the Harvey Society Lectures, delivered at the New York Academy of Medicine, November 4, was on the subject of "The Role of Fat in Diabetes" and was delivered by Dr Frederick M Allen of the Hospital of the Rockefeller Institute

Personal—Dr Jay F Auner of the Vanderbilt Clinic has located in Des Moines, Iowa, and announces that he will hereafter limit his practice to diseases of the skin and radiology——Dr J Richard Kevin, New York, has returned from his duties with the Twenty-Third New York Infantry on the Texas border, on thirty days' leave of absence——Dr William C Woolsey, Brooklyn, who has been on duty with the American Ambulance Paris, has started on his return to this country—Dr Joseph Lipman, who recently received several gunshot wounds, inflicted by a patient who complained of the treatment given her, is being cared for in the Polyclinic Hospital and will probably recover

Poliomyelitis Records—*Bulletin No 43* of the health department gives records of the case fatality, hospitalization and crippling from poliomyelitis during the past summer The true cases of poliomyelitis numbered 8,927 and the total number of deaths, 2 343, or a case fatality of 26 24 per cent The patients treated in the hospitals of the department of health numbered 4,474, with a case fatality of 14 59 per cent The patients admitted to twenty-seven other hospitals in the city numbered 2,663, and showed a case fatality of 14 53 per cent The patients treated at home numbered 2,040, and showed a case fatality of 63 87 per cent This high case fatality was mainly due to the fact that these cases were of the severest type From August 21 to October 13 there were discharged from the hospitals of the department of health 2 058 patients Of these, 66 per cent showed evidences of paralysis of some degree, 18 per cent showed that paralysis had wholly disappeared, while 15 per cent had not shown paralysis at any time in the course of the disease

Paratyphoid Among New York Troops—Of 1,100 men of the Fourteenth Regiment who left for Texas, 130 have been or are ill with paratyphoid fever Of the 1,600 men in the Seventy-First Regiment, there have been to date fourteen cases of paratyphoid fever The returning troops were ordered to Camp Whitman and while there a large amount of laboratory work was done by the New York State Department of Health The examination of 850 stools revealed forty carriers many without any history of illness Before returning to New York all members of the Fourteenth and Seventy-First regiments received one dose of paratyphoid vaccine In the case of the Fourteenth, because of the high degree of infection, a complete vaccination was insisted on After returning to New York, the troops were kept at the armory, under supervision for two weeks, before being mustered out The chronic carriers have been made known to the board of health and will be under their supervision The vaccination of the families of these carriers will also be carried out by the department of health

The Tuberculosis Situation in New York.—The Bureau of Public Health Education has prepared a review of the present status of antituberculous work in this city The statement is made that despite the strenuous antituberculous work of the past ten years, and the annual expenditure of hundreds of thousands of dollars, *one seventh of all deaths are due to tuberculous infection Though progress is slow, it is shown* that tuberculosis is gradually being reduced, thus in this city the pulmonary tuberculosis rate per thousand of population has fallen from 2 37 in 1900 to 1 61 in 1915 According to the figures prepared by the health department there are, at the present time, over 35,000 recognized cases of pulmonary tuberculosis in the city Only 10 per cent of these patients are under the care of a private physician This fact directly indicates the economic injury caused by the disease It is estimated that the annual loss to the city from tuberculosis is $10,000,000 Over 6,000 patients with advanced disease are being cared for in institutions within the city, while nearly 2,800 are being cared for in out-of-town institutions This report discusses the housing problem as a factor in the production of tuberculosis, and suggests that a great need at the present time is employment for the consumptive under conditions that will not only conserve his health but will protect his fellow workmen and also the need of some method by which remuneration may be proportioned to the patient's needs and not merely to his earning capacity

NORTH DAKOTA

Health Department for Fargo—A committee has been appointed consisting of Drs Edward M Darrow, Olaf Sand Leunis Van Es, the mayor and a member each of the board of city commissioners and commissioners of Cass County, to make a thorough investigation as to the advisability of the establishment of a permanent health department in Fargo under a trained full time health officer

Hospital News—The Luther General Hospital, Harvey, was formally opened last week The institution has accommodation for fourteen patients and it is expected that a new wing will be added in the spring The institution is under the charge of Dr Arnt T Floew——At the annual meeting of the Minot General Hospital Association, October 19, it was decided to go ahead with the selling of stock of the association and to maintain a school for nurses in connection with the institution The directors have agreed on the general plan of the building which is to be on the unit system, the first unit of which will cost $85,000

Personal—Dr LeRoy H Labbitt has been appointed examining surgeon at Enderlin for the Minneapolis, St Paul and Sault Ste Marie Railway——Dr George W Williamson Grand Forks, has been appointed a member of the national committee on uniform laws and state regulations by the Federation of Medical Boards of the United States——Dr Carl F Raver, Grand Forks has been appointed health officer of Aberdeen, S D——Dr Leverett D Bristol, for two years professor of bacteriology and hygiene and director of the City Public Health laboratory at the University of North Dakota, University, has accepted the newly created Boston Dispensary fellowship in public health in the Department of Preventive Medicine at Harvard Medical School Boston——Dr Nils Myklestad, Minot, has returned after four months in the hospitals of Germany and Austria

PENNSYLVANIA

Hospital Activities—Hospital day exercises were held at St Luke s Hospital, South Side Bethlehem, October 18 The principal address was delivered by Dr Benjamin F Royer of the state health department——The Sacred Heart Hospital, Allentown, is undertaking a campaign to raise $150,000 Dr Henry I Klopp is chairman of the citizen committee which consists of 100 business men, who will be in charge of the campaign——The board of health of Erie has asked the appropriation of $10,000 for the construction of new buildings at the Municipal Hospital

Personal—Members of the Blair County Medical Society tendered a farewell banquet at Altoona, to Dr Samuel Calvin Smith, Hollidaysburg who is about to locate in Philadelphia ——Dr and Mrs Ambrose J Herr, Lancaster, celebrated the fiftieth anniversary of their marriage October 4——Dr Daniel A Webb Scranton who is now on duty at the Military Hospital at Shorncliffe England, expects shortly to be sent to France——Dr George J Van Vechter has been appointed director of the department of health of Scranton

Philadelphia

Memorial Meeting for Dr Rodman—At the stated meeting of the College of Physicians, Philadelphia, November 1, Dr James W Holland read a memoir of the late Dr William L Rodman

Dr Rush's Birthplace Destroyed—On October 7, fire of undetermined origin destroyed the historic stone barn built in 1700 on the Parry estate at Torresdale The barn is said to have been the birthplace of Dr Benjamin Rush

Glanders Prevalent—On October 25, Dr Wilmer Krusen, director of public health and charities, issued a warning to owners of horses, calling attention to the prevalence of glanders in this city and advising them to protect their stock Since January 1,180 horses have been affected

Pediatric Societies' Joint Meeting at Boston—The joint meeting of the Philadelphia Pediatric Society, the Pediatric Section of the New York Academy of Medicine, the New York State Society, the New Jersey Pediatric Society and the New England Pediatric Society was held in Boston, November 4 The Harvard Club was the headquarters

Med -Chi Men for University Faculty—The following former members of the Medico-Chirurgical College Faculty have been duly elected members of the Faculty of Undergraduate Medicine in the University of Pennsylvania Dr Joseph McFarland, professor of pathology, Dr John C Heisler, professor of anatomy, George H Meeker, Sc D, LL D, professor of chemistry, Dr Horatio C Wood, Jr, professor of pharmacology and therapeutics, and Dr Seneca Egbert, professor of hygiene

Personal—Dr C Lincoln Furbush, who was appointed, October 26 special assistant to the American Embassy at Berlin will leave for Germany about the middle of November He will also act as medical inspector to the allied prison camps in Germany——Dr Wilmer W Trinkle has been appointed coroner's physician, to succeed the late Dr Thomas J Morton——Dr J Torrance Rugh has been made visiting orthopedic surgeon to the West Philadelphia Hospital for Women——Dr Leon Brinkmann succeeds Dr Melvin M Franklin as visiting surgeon to the Jewish Hospital, the latter becoming a consulting surgeon

GENERAL

Southern Physicians to Meet—The annual meeting of the Southern Medical Association will be held in Atlanta November 13 to 16 under the presidency of Dr Robert Williams, Jr Charleston, S C

New England Surgeons Organized—More than eighty surgeons of New England attended the inaugural meeting of the New England Surgical Society at Boston recently Dr Samuel J Mixter, Boston was elected president

Guarding Against Typhus—The United States Public Health Service has erected disinfecting stations in Texas at Eagle Pass, El Paso Brownsville and San Antonio, in order to prevent typhus fever from crossing the Mexican border to the United States A civil engineer, driven out of Mexico is said to have died from typhus fever at El Paso, October 19

Personal—Maj Thomas L Rhoads, M C U S Army, who recently returned from Panama to await orders from the War Department has been notified that he is to go to France to become the head of a hospital at Passy near Paris, which has been presented to the French government by four Americans Major Rhoads has been given four months leave of absence for this purpose

Railway Surgeons Meet—At the second annual meeting of the Chicago Great Western Railway Surgeons' Association held at the Hotel Sherman in Chicago last week the following officers were elected president Dr Paul E Gardner New Hampton, Iowa, vice president Dr Overton Brooks, Chicago, and secretary-treasurer Dr Orry C Morrison Carroll, Iowa The 1917 meeting will be held at Red Wing Minn

Health Specialists Hold Meeting—At the annual meeting of the American Public Health Association, held in Cincinnati, October 24 to 26 under the presidency of Dr John F Anderson, U S P H S, the following officers were elected president, Dr William A Evans Chicago, vice presidents, Drs John H Landis Cincinnati Maurice McD Seymour, Regina, Sask and Manuel Iglesias Vera Cruz Mexico, secretary, S N Gunn, Boston, and treasurer, Lee K. Frankel, New York.

Fraudulent Subscription Canvassers Arrested—Word has been received that the subscription canvassers who falsely represented themselves as students in a contest for college scholarships and about whose activities frequent warnings have appeared in THE JOURNAL, have been arrested in California On the various subscription blanks used were the titles—Michigan Educational Association, Cornell Educational Association, National Educational Association, and United Students Aid Society An endeavor is being made to collect evidence for use in prosecution Any one victimized who desires to aid may address The Journal

Bequests and Donations—The following bequests and donations have recently been announced

Brooklyn Hospital $5 000 by the will of Miss Elizabeth B Estas

Long Island College Hospital $20 000 Brooklyn Hospital $12 000 and House of St Giles the Cripple Brooklyn, $10 000 by the will of Francis S C A Ripley

Beth Israel Hospital New York an annual income of $500 and Hospital for Deformities and Joint Diseases an annual income of $100 by the will of Harris Wolff

Greenville (S C) Hospital a donation of $6 300 from the Ladies' Auxiliary Association

Norwegian Lutheran Deaconess Home and Hospital Chicago, $150 000 as the result of a ten-day campaign

Jackson Park Sanitarium Chicago $1 400 the result of a sale held at the residence of Mrs Edward Tilden October 19

For a tuberculosis ward for negro women and children at the Charity Hospital New Orleans subscription of $1 543 84 of the $3 500 required

International Hospital Tokyo Japan subscriptions of $32 000 announced at the general convention of the Protestant Episcopal Church St Louis October 21

American College of Surgeons—On Friday evening October 27, the annual business meeting of the American College of Surgeons was held in Philadelphia and 232 fellowships were conferred The following officers were elected president, Dr George W Crile Cleveland, first vice president, Dr Robert G LeConte, Philadelphia, second vice president Dr Rudolph Matas, New Orleans, general secretary, Dr Franklin H Martin, Chicago, and treasurer, Dr Albert J Ochsner, Chicago At this meeting the question of the development of a closer relationship between the surgeons of North and South America was discussed The following committee was appointed to visit South America and to invite the medical men of the Latin-American republics into closer communion with the doctors of the North Dr Edward Martin, Philadelphia, Drs Charles H and William J Mayo Rochester, Minn Drs Franklin H Martin and Albert J Ochsner, Chicago, and Dr Franklin F Simpson, Pittsburgh

Clinical Congress of Surgeons—The seventh annual meeting of the Clinical Congress of Surgeons was held in Philadelphia, with headquarters at the Bellevue-Stratford Hotel, October 23 to 27 Twenty medical societies and forty hospital organizations of Philadelphia acted as hosts and Dr Robert G LeConte was chairman of the committee of arrangements The retiring president responded to the address of welcome and the new president Dr Fred Bates Lund Boston, was inducted into office Drs Jasper Halpenny, Winnipeg, Man, and Samuel M D Clark, New Orleans, were inaugurated as vice presidents The subject of the presidential address delivered by Dr Lund was ‘The Indications for Cholecystotomy” More than 1 600 members were registered from all parts of the United States and Canada and abroad The regular meetings were conducted from Monday until Friday The first three meetings were for the visiting surgeons Papers were presented and discussed by the masters in surgery The evening sessions were unusually popular as evidenced by the fact that the large ball room and gallery of the Bellevue-Stratford Hotel were crowded The last evening meeting (Friday), known as the public meeting was held in Witherspoon Hall At the regular business meeting held Thursday, October 26 the following officers were elected president, Dr John G Clark, Philadelphia, first vice president, Dr George Henderson Lee, Galveston Texas, second vice president, Dr Edgar W Allin, Edmonton, Alberta, Canada, secretary general Dr Franklin H Martin, Chicago (reelected) and treasurer, Dr Allen B Kanavel, Chicago (reelected) The next meeting place of the congress will be New York in 1917

War Hospital Exhibit.—The first base hospital ever established for exposition purposes held a special exhibit for the visiting physicians of the Clinical Congress of Surgeons at the camp site on Belmont Plateau Fairmount Park Philadelphia, October 28 Dr Franklin Martin Chicago and Col Jefferson R Kean director general of Military Relief Red Cross are the originators of the idea to establish exhibition base hospitals Twenty-six similar models will be shown in different parts of the country and experts figure that at least twice as many should be at the disposal of the government in case of war This exhibit was given by the Lakeside Unit Red Cross Hospital of Cleveland Dr George W Crile was director of the unit and his principal coadjutor was Maj H W Jones of the regular army, who had active charge of the demonstration The staff was as follows Dr A R Warner, quartermaster, Dr W R Barney, adjutant, Dr L B Sherry, registrar, and Miss G E Allison, chief nurse The tented hospital city was erected in the form of a hollow square On the extreme flanks were the quarters of the surgeons and nurses, and the mess tents where the cooks prepared food for both unit personnel and the patients The foreground was occupied with the administration offices, equipped like any regimental site in the regular army Within the hollow square were pitched the tents that comprise the wards accommodating 500 wounded, with the necessary tents for the storage of equipment linen, surgical instruments and utensils To each tent were assigned three nurses, a head nurse and two assistants The entire personnel required one director and three assistants, six staff surgeons and five staff physicians, orthopedist, ophthalmologist, neurologist, bacteriologist, roentgenologist, two dentists registrar, quartermaster, chaplain and two assistants, two pharmacists, fifty nurses, twenty-five aids two laboratory assistants, eleven men in the record station, ten men in the supply station, twenty-eight in the subsistence department, twenty-six orderlies and sixteen civilians for various duties The hospital equipment as it stood was estimated to be worth $70,000, of which half was in the cost of the surgical instruments These were loaned by Dr George E Brewer and were the possessions of his hospital unit of the Presbyterian Hospital of New York Col George H Penrose, commandant at the Schuylkill Arsenal, loaned the tentage

FOREIGN

Death in the Profession Abroad—E B Barnet, one of the organizers of the National Board of Health in Cuba and chief of its publishing department, founder of the *Revista de la Asociacion Medico-Farmaceutica* and official delegate from Cuba to various international medical and public health congresses

Cancer Research in Norway—The Norwegian Cancer Research Association pays a crown (27 cents) for each report of a case of cancer in Norway sent in to the secretary, Dr F G Gade Christiania The association also examines and reports on specimens of tissue suspected of being cancerous from the living subject or cadaver with no expense to physician or patient Question blanks for recording cases are sent on demand

Soap Cards in Germany—Our Christiania exchange relates that the ration allowed in Germany of soap and other washing materials made with grease has been definitely established as 50 gm toilet and barber soap for each person per month, or 250 gm soap powder Green soap is not dispensed at all Hospitals are given soap to correspond to the amount of their wash, but physicians midwives and nurses get their soap on their bread card This entitles physicians to 100 gm toilet soap and 500 gm other soap per month It seems that the regulation of the food supplies was arranged without consulting the medical profession, and many difficulties have arisen in getting suitable extra fare for the sick, as the regulation of the milk butter cream and meat supplies is in the hands of separate departments

Collective Study of Operations for Goiter—The Swiss Surgical Association has sent out a question blank throughout Switzerland to collect data on operative treatment of goiter All cases of radical operation for simple goiter and for exophthalmic and malignant goiter are to be listed separately as also all minor operations on the thyroid The complications secondary lesions, recurrences mortality, and causes of death are to be recorded with the operative technic grouping the cases by years and mentioning the very earliest symptoms Those able to supply data for deceased colleagues are asked to honor their memory by doing so The data are to be sent as soon as possible to the secretary of the association Dr F Steinmann Bern All will be held strictly confidential and returned to the writer The data are to be worked up and the summary presented at the next annual meeting of the association

Improvised Hospital for Contagious Diseases—M Labbe has been called on to organize a number of contagious disease hospitals for the French troops at the front, and has encountered numerous practical difficulties as he relates in the *Annales de Medecine* 1916 iii, 436, in what he calls a critical review of the whole subject. He tells how he surmounted the various difficulties, utilizing local resources and warding off possible factors of harm A laboratory should be in the same building, he insists, so that the proper measures can be taken without a moment's delay when the bacteriologic diagnosis is once made One great advantage of these military hospitals is that the physician in charge has all the reins in his own hands, and can supervise personally every detail The twenty-three page article is intended for the novice in such matters and gives the rudiments as well as the minutest data for getting up such a hospital and running it satisfactorily at the least expense

CANADA

Hospital News—The Canadian Hospitals Commission is securing the Sanita, Chatham, Ont, and another hotel at Preston, Ont, where there are mineral waters These will be used for the benefit of returned soldiers——The Ontario government has agreed with the Canadian Hospitals Commission to bear the expense of enlarging sanatoriums at London and Hamilton, to the extent of $25,000 for the former and $15,000 for the latter This will give larger accommodation for returned tuberculous soldiers——Arrangements have been made by the Canadian Hospitals Commission to treat 1,000 to 1,500 Canadian soldiers suffering with rheumatism, now in England They will be brought to Canada as soon as all arrangements are fully completed——Fire destroyed St Elizabeth Hospital, Farnham, Que, October 25 Twenty-seven lives were lost The hospital is under the management of the Grey Nuns The institution was partly a school for children It is thought that the fire escapes were defective

Personal—Lieut -Col George Nasmith, C M G, chief of the Toronto Laboratories who has been on active service in France, has resigned and is returning to take up the duties of his office in Toronto——Dr Helen MacMurchy, inspector of hospitals, prisons and public charities for Ontario, was entertained by government officials of Manitoba during a recent trip West——Dr F W Schofield of the laboratory of the Ontario Board of Health has gone to Seoul, Corea, to be professor of bacteriology and hygiene in the medical college there——It is reported that Lieut -Col J George Adami, professor of pathology in McGill University, Montreal who held the position abroad of official Canadian recorder of medical history of the war, has resigned and will soon return to McGill——Dr Hadley Williams London, Ont has been appointed chief surgeon to succeed Lieut -Col Irving H Cameron (*who has returned to Toronto*) in the Ontario Military Hospital Orpington England——Dr George E Armstrong, chief surgeon of the Royal Victoria Hospital Montreal, has been appointed consulting surgeon to the Canadian overseas forces, with the rank of lieutenant-colonel——Capt H B Paul has been appointed commandant of the new Canadian hospital at Otchingill near Shorncliffe, England——Maj C A Warren Toronto, has been promoted to the rank of temporary lieutenant-colonel and is now acting A D M S at Camp Borden Ontario——Capt D A McClenahan, Hamilton, Ont, district medical officer of health in that part of Ontario, is reported to have been wounded in France while commanding a draft of a sanitary section——Captain Whittemore is reported wounded in recent fighting and now to be in Gray s Inn Road Hospital, London, England——Lieut -Col Clarence Starr, Toronto, has been called to London, England, to do special orthopedic surgery for a period of six months——Dr John R Irwin, Coburg, Ont, who has served for a year with the Royal Medicals in France, was recently summoned before the king to receive the Military Cross Dr Irwin was attached to the Second Worcestershire Regiment and went down into the front line at midnight when the enemy blew up a mine, burying two Canadian soldiers He went down the shaft 30 feet and out 300 feet, bent double excepting when he had to crawl on hands and knees, and spent an hour working with the men——Capt Howard Brown Jeffs Toronto, arrived home wounded early in October, but returns in January——Lieutenant-Colonel McCombe, A D M S, of the London area, has tendered his resignation and his place is being taken by Lieutenant-Colonel Watt, Winnipeg, who has been in command of the Granville Hospital at Bramshott, England——Lieut -Col A T Shillington, Ottawa, A D M S, of the personnel at headquarters, will take a similar position at Shorncliffe, England——Lieutenant-Colonel Peters, Montreal, now in command of No 9 Field Hospital is succeeding Colonel Shillington——Lieutenant-Colonel Wilson, A D M S, Shorncliffe, will go to London as deputy director, vice Lieut -Col Murray Maclaren C M G who will probably take charge of a hospital in England

PARIS LETTER

Paris, Oct 5, 1916

Death of Dr Valentin Magnan

Psychiatry has suffered a great loss in the death of Dr Magnan, honorary chief physician of the Asile Sainte Anne at Paris, recently deceased at Suresnes (department of the Seine)

Valentin-Jacques Joseph Magnan was born at Paris, March 17, 1835 He was intern at the Salpetriere under Baillarger and Falret, and, from the commencement of his studies, occupied himself with mental diseases One year after receiving the degree of doctor of medicine, he was appointed physician of the Asile Sainte-Anne (1867) The following year he inaugurated in his service a clinical course which drew many French and foreign physicians, but although in reality a remarkable teacher, the faculty of medicine never confided a chair to him During the forty years in which he remained at the asylum Magnan contributed in this manner to the professional education of several generations of alienists He published a series of interesting works on paresis, on hereditary insanity, on degenerates, on delirium, on sexual perversion and on other subjects In addition, he carried on an energetic campaign against alcoholism, the ravages of which his experience as an alienist particularly qualified him to appreciate In 1873 the Academie de medecine awarded the Civrieux prize to him for a memoir on this subject A number of his lessons have been published under the title "Leçons cliniques sur les maladies mentales," the second edition of which appeared in 1893

Magnan was elected a member of the Academie de medecine in 1893, and became president of that body in 1915 In his will he has left the sum of 25 000 francs ($4,825), the interest of which is to form a triennial prize to be awarded to the author of the best work on psychiatry or to the best study of a mental disease published in the course of the three previous years

The War

CONTAGIOUS DISEASES AMONG THE TROOPS AT THE FRONT

Dr Boigey, having observed the development of contagious diseases in a detachment at the front during the year 1915, has noted that notwithstanding fatigue, overcrowding and unfavorable climatic conditions (damp cold, rains fogs), the total of contagious diseases in this detachment was almost three times less than in time of peace The figures for the year 1915 are

Disease	No of Cases
Measles	176
Scarlet fever	122
Mumps	422
Diphtheria	105
Cerebrospinal meningitis	28
Total	853

According to medical statistics for similar forces of the army in time of peace, the mean annual number of cases of contagious diseases admitted to the military hospitals would have been

Disease	No of Cases
Measles	730
Scarlet fever	295
Mumps	1 050
Diphtheria	66
Cerebrospinal meningitis	16
Total	2 157

In spite of the extreme contagiousness of measles and scarlet fever, they did not spread among troops bivouacked or camping in the war zone in makeshift shelters where there was the utmost overcrowding Dr Boigey attributes this relative immunity to life in the open air and to the hyperoxygenation Except for one epidemic episode of mumps which occurred in November in a camp near the front, it seemed to Dr Boigey that repeated contact did not possess the importance usually attributed to it in the communication of contagious diseases These facts lead even the most skeptical to believe that predisposition plays the most important role in this matter, and that the pathogenic seed, however abundant and however virulent, will not germinate in an inappropriate soil

SANITARY TEAMS IN THE ARMY

The undersecretary of state for the military health service has decided on the immediate constitution of two crews or teams in each region to be called sanitary teams, intended for the service of the army The object is to insure hygienic and sanitary measures necessary for the health of the troops in the war zone Each team will consist of fifteen of the youngest men from the auxiliary service, who, from a technical point of view, will be under the orders of a pharmacist of the auxiliary forces and will be commanded by a sergeant and two corporals Men of these teams will receive special instruction, theoretical and practical, in the general hygiene of active service, notably, that which concerns lime washing, disinfection of latrines and disposal of manure, the fight against flies and mosquitoes, the destruction of garbage, the killing of lice, bathing arrangements, and the purification and protection of drinking water As far as possible, each member will specialize in one part of this program so that he may, if necessary, be able to direct fatigue parties without hygienic instruction who may be called on to work under his orders Distributed among the armies where needed, these teams are intended to insure a permanent hygienic surveillance and action which the camps lack at present, owing to frequent displacements of troops These orders will go into effect October 15

THE LIBRARY FOR THE BLIND

The Valentin Hauy Association has established a house for the blind at rue Duroc 9, the perfect equipment and services of which constitute a synthesis of the progress hitherto realized in construction, and in the technical and professional education of those who have lost their sight This house contains a library of more than 45 000 volumes in Braille characters, to which acquisitions are constantly being added and also various periodicals of interest The annual circulation is more than 50 000 volumes, lent to more than 2 000 readers It furnishes more particularly municipal libraries, and has at present sixty-seven depots in the departments This institution, which is the best of its kind in the world, and intended to be useful to the blind not only of France but also of foreign countries, will prove of the greatest value to those who have lost their sight during the war

SALE OF SKIMMED MILK

At the last meeting of the Council of Public Hygiene of the department of the Seine, Professor Letulle read a report on an ordinance made by the mayor of a township of this department, regulating the transportation and sale of skimmed milk A discussion ensued in which most of the members of the council took part A very serious question is involved as for children, even more than for adults, skimmed milk is an absolutely insufficient aliment, and consequently, dangerous If any proof is necessary, it is to be found in the fact that in certain districts of the North where the sale of skimmed milk has greatly increased, infant mortality has been augmented As a result of this report and of the discussion on the proposition of Vaillard and Sellier, the following resolution was passed 'As the consumption of skimmed milk an insufficient aliment for adults constitutes a real danger for children and for sick persons, the opinion of the council is that the prefect of police should refuse his approval of the municipal ordinance in question"

LONDON LETTER

London, Oct 16, 1916

The War

A NEW HOSPITAL FOR FACE INJURIES

In previous letters to The Journal, the advantage was pointed out of the practice now in vogue of segregating various kinds of war injuries in special hospitals In the American Hospital at the Lycee Pasteur was first shown the advantage of providing special treatment for the disfiguring injuries of the face and jaws A new hospital for these injuries has been formed in London It contains thirty beds and is completely equipped as a maxillofacial hospital", in other words, as a hospital where jaw injuries and injuries to the face may be dealt with by plastic surgeons and dentists This work is specialized in the highest degree it involves the replacing of lost bone by splints made of vulcanite and other materials, the resetting of badly healed fragments, the reduction of deformities, the grafting of skin to cover unhealed wounds, and, finally, the making of artificial skin areas, and even whole organs, as the ear and nose

FOOD PRICES

Since the war began, the price of food has nearly doubled, which is a serious matter for many people The board of trade has appointed a committee to deal with the question and the committee has unanimously recommended among other things (1) the speeding up of mercantile shipbuilding, (2) the extension of the restrictions on the importation of superfluities, (3) the development of the government meat-purchase policy, (4) the imposition of conditions on merchants and retailers of government-bought meat to secure sale at reasonable prices, (5) the voluntary institution of one meatless day a week, (6) the empowering of local authorities to open municipal milk, meat, bacon and other foodstuff shops, where retailers are taking excessive profits, and (7) the revision by employers and public bodies of their payrolls in favor of the lower paid workers Some of the members of the committee went further, and in a minority report asked the government to purchase meat and bacon on a large scale, and where possible become the sole purchaser and give the public the full advantage of this mode of buying One of the causes of dearness of meat is the great demand of the allied army Even in 1915 its consumption of frozen beef was so great that only half the usual supply was available for the civilian population

Miners' Phthisis in South Africa

A government committee appointed to report on the working of the miners' phthisis acts in South Africa states that the disease is due to the inhalation of silicious dust When inhaled over long periods, this is carried into the substance of the lung itself, setting up inflammatory changes and leading to the formation of new fibrous tissue Though the disease begins as a silicosis, the affected lung is apt to become tuberculous It is believed that the very fine dust (particles under 12 microns in diameter) is the most important factor in the causation of the disease The fumes of explosives are a subsidiary factor in the development of the disease Ventilation and water spraying are the only means of prevention, and there are practical difficulties in the way of fully satisfactory arrangements

The English Face Altering

In the section of anthropology of the Annual Meeting of the British Association for the Advancement of Science, Professor Keith, in a paper on "Recent Modification in the Facial Type of the English People" described a modification of the cheek bones which, he said, is part of the general reduction which is affecting all the parts concerned in the act of chewing There is also to be seen in a considerable proportion of modern skulls a change in the bones of the nasal aperture, which is becoming narrow The most definite changes in the modern skull are in the jaws, gums, palate and teeth In every tenth modern woman and in every fifteenth modern man there are deficiencies in the development of the jaws contractions of the palate, and irregularities of the teeth, which did not become common until quite recent centuries A minute comparison of skulls which Keith has made shows that the English face has become narrower and longer He considers that there is urgent need of a physical survey and census of the British people Physical changes are taking place, and some of them are not for our ultimate good

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Marriages

Walter Lee Nicholls, M D, to Mrs Theresa Kennedy O Ferrall, both of Baltimore, at Washington, D C, October 19

Clayton Wilson Klontz, M D, to Miss Lula Marion Swanson, both of Chicago, at Crown Point, Ind, October 19

George Franklin Worcester M D, Merrimac Mass, to Miss Blanche P Thompson of Haverhill, Mass October 18

Charles Arthur Sima, M D, Chicago to Miss Alice Kathryn Burtch of Kansas City, Mo, October 21

Frank M McCartney, M D, to Miss Elizabeth M Mitchell, both of Denver, at Littleton, Colo, October 16

John Albert Van Kirk M D, Watseka, Ill to Miss Maude Florence Steele of Kentland, Ind, October 28

Carl Schumann, M D, Greene N Y, to Miss Nina C Winn of Pageville, Ky, October 25

Donald Keyes Clark, M D, to Miss Susan Frances Brooks, both of Louisville, Ky, October 18

Lorah Otho Fox M D, to Miss Emily Kyle Vawter, both of Ansted, W Va October 25

Sidney Cohn M D New York, to Miss Dorothea Cuddy of Stamford, Conn October 16

Joseph R Mitchell, M D, to Miss Rhoda A Hess, both of Chicago October 4

Deaths

Owen Jason Evans, M D, Minneapolis, Albany (N Y) Medical College, 1862, aged 76, formerly a Fellow of the American Medical Association, a veteran of the Civil War, in which he served as surgeon of the Fortieth New York Volunteer Infantry, once vice president of the Minnesota State Medical Association and president of the Hennepin County Medical Society, a member of the city council of Minneapolis, from 1878 to 1882 health officer of Minneapolis, a member of the board of education in 1881, and a member of the legislature in 1884, died suddenly at a banquet of the John A Rawlins Post, G A R, October 17, from heart disease

Frederick Charles Weaver, M D, Dayton, Ohio, Miami Medical College, Cincinnati, 1894, aged 45, a member of the Ohio State Medical Association and of the Association of Military Surgeons of the United States, who entered the Ohio National Guard in 1887 and after passing through the various grades became major and surgeon in 1900, having had service during the Spanish-American War and as acting assistant surgeon, U S Army in the Philippine Islands visiting physician to St Elizabeth's Hospital, Dayton, and surgeon of Dayton police department from 1894 to 1899, died at his home, October 14

Alexander Augustus Uhle, M D, Philadelphia, Pa , University of Pennsylvania, Philadelphia, 1898, aged 42, a Fellow of the American Association, and College of Physicians of Philadelphia, assistant instructor in genito-urinary diseases in his alma mater, assistant genito-urinary surgeon to the Philadelphia Hospital and chief of the urologic dispensary of the German Hospital, after having been given a local anesthetic, preparatory to the performance of a minor operation on the throat, died in the Medico-Chirurgical Hospital, Philadelphia October 22 from heart disease

Edward Howe Grannis, M D, Menomonie, Wis , Hahnemann Medical College Chicago, 1875, aged 62, formerly a Fellow of the American Medical Association, a member of the State Medical Society of Wisconsin, and of the Association of Military Surgeons of the United States, surgeon of the Third Wisconsin Infantry, U S V, during the war with Spain, with service in Porto Rico, for two years surgeon-general of Wisconsin, a specialist on diseases of the eye, ear, nose and throat, died at his home, October 14, from pernicious anemia

Nathaniel Matson, M D, Brooklyn, New York University, New York, 1864, aged 77, formerly a Fellow of the American Medical Association, a member of the Medical Society of the City of New York a member of the medical staff of Bushwick Hospital and Bethany Deaconess' Home, Brooklyn, a practitioner of Brooklyn for more than half a century and a veteran of the Civil War, in which he served as surgeon of the First Connecticut Volunteer Heavy Artillery, died at his home, October 15

Eugene Clarence Dunn, M D, Fresno, Calif , New York University, New York, 1881, aged 62, a member of the Medical Society of the State of California and a practitioner of Fresno for twenty-seven years, formerly division surgeon for the Santa Fe System at San Marcial, N M , died in the Burnett Sanitarium, Fresno, October 14, from nephritis

Henry Joseph McKenna, M D, Long Island City N Y , University and Bellevue Hospital Medical College, New York 1901, aged 37, a member of the Medical Society of the State of New York, since 1904 consulting surgeon to St John's Hospital, Long Island City, died in the Towns Private Sanitarium, Manhattan, October 17, from nephritis

Joseph Ransom Brown, M D, Seward, N Y , Albany (N Y) Medical College, 1868 aged 68, a Fellow of the American Medical Association, a veteran of the Civil War and acting assistant surgeon, U S Army until 1877, health officer of the town of Seward and since 1897 postmaster, died at his home, October 13, from arteriosclerosis

Frank S Stirling, M D, Lewiston Idaho, Cooper Medical College San Francisco, 1864, aged 80, a member of the Idaho State Medical Association, formerly surgeon for the Pacific Mail Company and later a surgeon in the Modoc War, acting assistant surgeon, U S Army in 1878, and on duty at Fort Lapwai, died at his home October 15

Isaac Robinson Godwin, M D, Fincastle Va , Medical College of Virginia, Richmond 1860, aged 79, assistant surgeon in the Confederate service during the Civil War, formerly a Fellow of the American Medical Association, a member of the Medical Society of Virginia and vice president in 1877, died at his home, October 1

Charles William Penn Brock, M D, Richmond, Va , Medical College of Virginia, Richmond, 1859, aged 80, a member of the Medical Society of Virginia and one of the best known surgeons of the South, chief surgeon on the staff of Major General Kemper, C S A, during the Civil War, died at his home, October 19

Chester L Fought, M D, formerly of Erie, Mich , Western Reserve University, Cleveland, 1897, aged 45, formerly a Fellow of the American Medical Association, a member of the Michigan State Medical Society, died at his old home in Oak Harbor, Ohio, October 12, from heart disease

James P Connell, M D, Fond du Lac Wis , Northwestern University Medical School, Chicago, 1887, aged 54, a Fellow of the American Medical Association, attending surgeon to St Agnes' Hospital Fond du Lac, died in that institution while performing a surgical operation, October 21

Ellzey Elijah Smith, M D, Blue Mountain, Miss , Kentucky School of Medicine, Louisville, 1876, aged 68, formerly a member of the Mississippi State Medical Association, died in a hospital in Ripley, Miss, October 13, from axe wounds inflicted by his insane wife

Azarie Moise Joseph Provost, M D, Berlin N H , Dartmouth Medical School, Hanover N H, 1898, aged 46, a Fellow of the American Medical Association, formerly chairman of the board of health of Berlin, died at his home September 9, from lobar pneumonia

William Lander Settlemyer, M D, Gaffney, S C Kentucky School of Medicine Louisville 1892, aged 49, formerly a member of the South Carolina Medical Association, a member of the board of regents of the South Carolina State Hospital, died at his home, October 8

Cecil Carew Kimmel, M D, Fort Wayne Ind Indiana Medical College Indianapolis 1907, aged 34, a Fellow of the American Medical Association, died in the Lutheran Hospital, Fort Wayne, October 18, from pneumonia complicating typhoid fever

Edwin Elliott, M D, Chesaning Mich , Detroit College of Medicine and Surgery 1894, aged 52, formerly a Fellow of the American Medical Association, a member of the Michigan State Medical Society, died at his home, September 23, from angina pectoris

Isaac Diller Jones, M D, Murdock Neb , University of Nebraska Omaha, 1895, aged 52, a member of the Nebraska State Medical Association, local surgeon for the Rock Island System, died at his home October 10, from chronic interstitial nephritis

Fenton Devany Drewry, M D, Virgilina, Va , Medical College of Virginia Richmond 1898 a member of the Medical Society of Virginia, aged 39, died October 18, at the Sara Leigh Hospital Norfolk two weeks after an operation for appendicitis

John B Peters, Macy Ind (license Indiana, 1897), aged 64, a member of the Indiana State Medical Association, died at his home, July 2, from peritonitis following an acute suppurative appendicitis

Thomas Corwin Frary, M D, Hoquiam, Wash , Michigan College of Medicine and Surgery, Detroit, 1890, aged 75, dropped dead on the street at Hoquiam, from cerebral hemorrhage July 30

James H Shannon, M D, Saco, Me , Jefferson Medical College 1884, aged 74, a member of the Maine Medical Association, died at his home September 14, from cerebral hemorrhage

Milton Scott McMurtry, M D, Clovis Calif , Missouri Medical College, St Louis 1877 Bellevue Hospital Medical College, 1880, aged 60, died at his home, October 3, from pneumonia

William Stiles, Jr, M D, Philadelphia, Hahnemann Medical College, Philadelphia, 1875, aged 74, a veteran of the Civil War, died at his home, October 7, from uremia

Daniel Newton Mason, M D, Suisun City, Calif , American Medical College St Louis, 1879 aged 73, also a druggist, died at his home, October 5

Frank Cline Ferguson, M D, Baltimore, Md , University of Maryland, Baltimore, 1901, aged 37, died at his home October 11, from pleurisy

Stockbridge Patton Graves, M D, Saco Me , New York Homeopathic Medical College 1861, aged 90, died at his home, October 12

The Propaganda for Reform

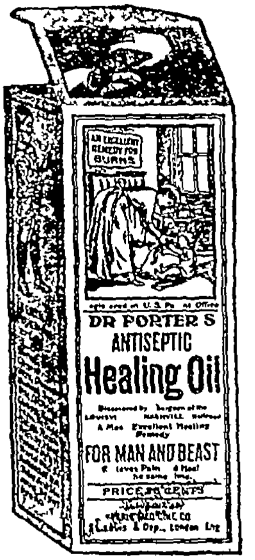
In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

SOME MISBRANDED NOSTRUMS

DR PORTER'S ANTISEPTIC HEALING OIL

The Paris Medicine Company, St Louis, Mo, shipped in interstate commerce a quantity of 'Dr Porter's Antiseptic Healing Oil" which the government officials charged was misbranded The federal chemists analyzed the preparation and reported it to be 'essentially a solution of camphor and carbolic acid in cottonseed oil" The government charged that the following curative claims were false and fraudulent and made knowingly and in reckless, wanton disregard of their truth or falsity

> An excellent remedy for cuts sores old chronic ulcers corns, bunions frost bites sunburn stings bites rash, prickly heat, hives or all hurts and affections of the skin and mucous membrane'
>
> Not only is the use of an Antiseptic necessary for the relief of the Throat Trouble, but as many people know disease germs are most frequently taken into the system through the mouth This infection or entry of germs often results when there is even a slight irritation of the Throat and the use of Dr Porter's Antiseptic Healing Oil is a wise precaution against serious infectious diseases such as Whooping Cough, Diphtheria and Tuberculosis"
>
> 'Tumors and Cancerous Growths are growths of diseased tissues and if taken in time and treated with Dr Porter's Antiseptic Healing Oil they can be removed and often most serious cases averted



The company admitted that it was guilty of fraud and falsehood, and the court imposed a fine of $25 and costs—[*Notice of Judgment No 3969*]

BALLARD'S HOREHOUND SYRUP COMPOUND

'Ballard's Horehound Syrup Compound' was put on the market by James F Ballard, St Louis Mo The trade package contained, among numerous claims the following

> For Consumption Coughs and Colds '
> For Coughs Asthma, Dry Hacking Cough Irritation of Throat Soreness of Chest Croup Spitting of Blood, Influenza Lung Fever Whooping Cough &c '

These claims the federal authorities declared were "false and fraudulent' and applied 'knowingly and in reckless and wanton disregard' of their truth or falsity Ballard pleaded guilty and was fined $10 and costs—[*Notice of Judgment No 3971*]

DR SHOOP'S NIGHT CURE DR SHOOP'S COUGH REMEDY AND DR SHOOP'S RESTORATIVE

Dr Shoop s Night Cure" 'Dr Shoop's Cough Remedy" and Dr Shoop's Restorative' are among the many nostrums put on the market by 'Dr Shoop's Laboratories,' Racine Wis The following claims were made for Dr Shoop s Night Cure

> Dr Shoop s Night Cure will promptly cure Ulceration Inflammation or Congestion of the Womb Leucorrhoea painful Ovaries, falling of the Womb irregular or painful Menstruation and all diseases or weakness of women Will cure lacerated or torn Cervix (*due to childbirth*) Dropsy of the Uterus Will prevent and cure Ovarian and *other tumors* when used early and faithfully, including cancerous conditions

The Night Cure" was a suppository Analyzed by the federal chemists, it was reported to be made largely of cacao butter, with zinc carbonate, zinc sulphate and boric acid present The government charged that the claims quoted above were false and fraudulent and applied knowingly in reckless and wanton disregard of their truth or falsity

"Dr Shoop's Cough Remedy" was analyzed by the federal officials who reported that the stuff was "a sirup containing ammonium benzoate and probably white pine tar and gum" Claims were made on the trade package that would lead the purchaser to believe that the preparation was effective as a cure for consumption These claims the government charged were false and fraudulent and made knowingly

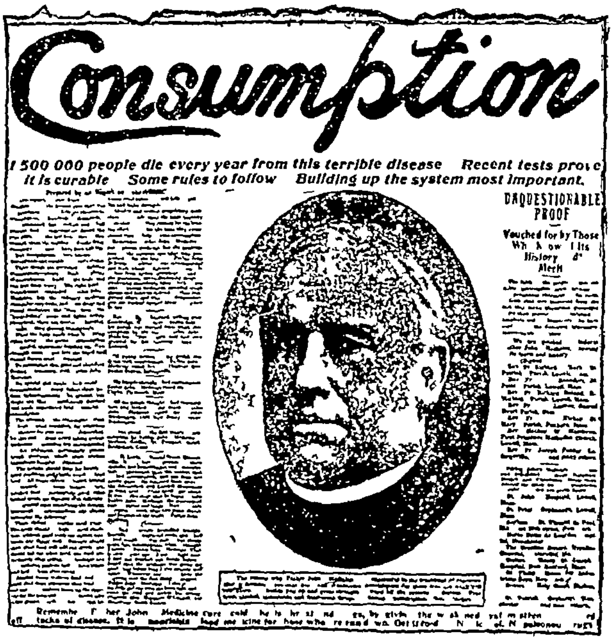
"Dr Shoop's Restorative" was sold under such claims as

> for the cure of all diseases of the stomach, liver kidneys and blood '
> Cures Bright s disease diabetes "
> The little child who was suffering with Gastritis is well
> The Restorative has made a perfect cure

The federal analysts reported that examination of Dr Shoop's Restorative showed it to contain 10 per cent of alcohol and 26 9 per cent of solids with benzoic acid, berberin, hydrastin and sugar present, ash containing iron, sodium, potassium, chlorids, sulphates and phosphates and indications of plant extractive matter The claims quoted above were, the government officials charged, both false and fraudulent and made knowingly and in reckless and wanton disregard of their truth or falsity The company pleaded guilty on all three charges and was fined $150—[*Notice of Judgment No 3972*]

FATHER JOHN'S MEDICINE

Over 4,000 bottles of "Father John's Medicine," prepared by Carleton and Hovey Company, Lowell, Mass, were seized by the federal authorities on the charge that the product was misbranded The officials declared that the claims to the effect that this nostrum was an efficacious medicine for consumption and that it was "without an equal as a body builder, health food, and for consumption," etc., were false and fraudulent and likely to induce the public "to believe *that said drug* was a cure for consumption whereas, in truth and in fact it was not a cure for consumption" The company, having withdrawn its claims and answers to the charge and having filed claims only, the court entered a judgment of condemnation and forfeiture and permitted the product to be delivered to Carleton & Hovey Co on payment of all the costs of the proceedings and the execution of a bond in the sum of $5 000—[*Notice of Judgment No 3906*]


Consumption
1 500 000 people die every year from this terrible disease Recent tests prove it is curable Some rules to follow Building up the system most important.
UNQUESTIONABLE PROOF
Vouched for by Those Who Know Its History

No longer is Father John s Medicine sold as a consumption cure' The photographic reproduction above is from an advertisement that appeared in the New York *Sun* in 1909 The original occupied *more* than 180 square inches

DR SHOOP'S TWENTY MINUTE CROUP REMEDY

Dr Shoop's Twenty Minute Croup Remedy was another of the galaxy of nostrums put out by the Dr Shoop's Laboratories, Racine, Wis The following claims appeared on the trade package

> Dr Shoop's Twenty Minute Croup Remedy Will usually check croup in Twenty Minutes
> It will prevent Croup if given where there is fever and symptoms of approaching Croup
> Will usually check even desperate cases in 20 minutes

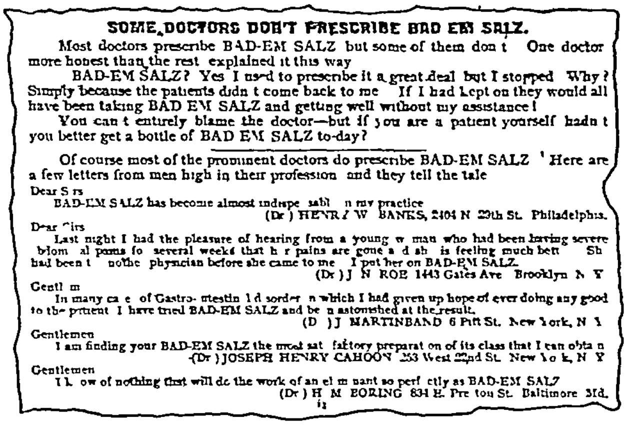
These and similar claims the federal authorities naturally charged were false and fraudulent and applied knowingly and in wanton and reckless disregard of their truth or falsity The federal chemists who analyzed the stuff reported that the "product is a sirup containing glycerin and a small amount of salicylic acid" The defendant pleaded guilty and was fined $100—[*Notice of Judgment No 3985*]

BAD-EM SALZ

"Bad-Em Salz," made by the American Laboratories Philadelphia, was analyzed by the federal chemists who reported that the preparation "consists of common salt, Glauber salt baking soda, and a small amount of tartaric acid" The following statements appeared on the trade package

> This Powder reproduces the medical properties of the great European Springs, famous for centuries for the cure of diseases of the stomach intestines liver kidneys or bladder
> This Powder represents the medicinal agents obtained by evaporating the water from the famous European Springs

These claims were declared false and misleading by the federal authorities because 'in truth and in fact, said article did not reproduce the medical properties of the Great European Springs,' etc, and, furthermore, 'was not composed of salts or substances derived from the waters of the springs at Ems Germany, but was an artificial preparation consisting essentially of common salt Glauber salts, baking soda and tartaric acid" In addition, the following therapeutic claims were made for the preparation



SOME DOCTORS DON'T PRESCRIBE BAD EM SALZ.

Most doctors prescribe BAD-EM SALZ but some of them don't One doctor more honest than the rest explained it this way

BAD-EM SALZ? Yes I used to prescribe it a great deal but I stopped Why? Simply because the patients didn't come back to me If I had kept on they would all have been taking BAD EM SALZ and getting well without my assistance!

You can't entirely blame the doctor—but if you are a patient yourself hadn't you better get a bottle of BAD EM SALZ to-day?

Of course most of the prominent doctors do prescribe BAD-EM SALZ ' Here are a few letters from men high in their profession and they tell the tale

Dear Sirs
BAD-EM SALZ has become almost indispensable in my practice
(Dr) HENRY W BANKS, 2404 N 29th St. Philadelphia.

Dear Sirs
Last night I had the pleasure of hearing from a young woman who had been having severe abdominal pains for several weeks that her pains are gone and she is feeling much better She had been to another physician before she came to me I put her on BAD-EM SALZ.
(Dr) J N ROE 1443 Gates Ave Brooklyn N Y

Gentlemen
In many cases of Gastro-intestinal disorders in which I had given up hope of ever doing any good to the patient I have tried BAD-EM SALZ and been astonished at the result.
(Dr) J MARTINBAND 6 Pitt St. New York, N Y

Gentlemen
I am finding your BAD-EM SALZ the most satisfactory preparation of its class that I can obtain
(Dr) JOSEPH HENRY CAHOON 253 West 22nd St. New York, N Y

Gentlemen
I know of nothing that will do the work of an eliminant so perfectly as BAD-EM SALZ
(Dr) H M BORING 834 E. Preston St. Baltimore Md.

A specimen of the Bad Em Salz advertising The exploiters of this nostrum when charged with making fraudulent claims for their product attacked the constitutionality of the Food and Drugs Act!

> dissolves Gall Stones and Gravel in the kidneys or bladder
> Gastritis can be headed off by a dose of Bad Em Salz at bedtime and again the next morning
> Diabetes yields to diet and Bad Em Salz

These claims and various others of a similar nature were declared by the federal officials to be 'false and fraudulent and made 'in reckless and wanton disregard of their truth or falsity" The American Laboratories, in its answer to the government's charges, declared that that part of the federal Food and Drugs Act—the Sherley Amendment—which prohibits false and fraudulent claims for curative effect was contrary to the Constitution of the United States of America" The jury before whom the case was tried declared the company guilty on both counts the first count that charging the company with falsehood and with making misleading statements, and the second, charging the company with falsehood and fraud After the verdict of guilty had been returned, the company made a motion in arrest of judgment and for a new trial These motions were both denied by the court, and the company was fined $100—[*Notice of Judgment No 3962*]

KENNEDY'S CAL-CURA SOLVENT

Dr D Kennedy's Cal-Cura Solvent was a cure-all put on the market by the Dr David Kennedy Company Rondout N Y According to the government chemists the preparation was a watery, alcoholic, sweetened liquid containing 2.44 per cent potassium acetate, 16.75 per cent alcohol, 52.46 per cent cane sugar and vegetable matter resembling mint, cardamom and boneset Reading the claims made for this preparation one might get the impression that there could be few ills that it would not cure To quote a few of them

> Dissolves and eliminates lithic acid from the Blood Gravel and Limestone formations from the Kidneys and Bladder and Gallstones from the Liver"
> Cures Diabetes Bright's Disease Constipation of the Bowels Dyspepsia and all diseases peculiar to women
> Cures all Constitutional Diseases of the Blood Scrofula Cancer and Canker Humors Rheumatism and Rheumatic Pains of the Joints and Muscles'
> prevents appendicitis"

Naturally, the federal authorities declared that these claims and a number of others equally preposterous were false and fraudulent" and were applied 'knowingly and in reckless and wanton disregard of their truth or falsity' The company pleaded guilty and the court imposed a fine of $50—[*Notice of Judgment No 3770*]

Correspondence

Bacteriologic Observations on Epidemic Poliomyelitis

To the Editor—In reference to the article of Dr George Mathers of Chicago on this subject (THE JOURNAL, Sept. 30 1916 p 1019), I beg to say that in the small epidemic of poliomyelitis which occurred in several of the western counties of Pennsylvania during the early autumn of 1907 a total of thirty-five cases of this disease were studied intensively, pathologically as well as clinically, and a report of these studies was published in the 'Report of the Commissioner of Health" for the year 1907 In that study it was shown that a gram-positive diplococcus, such as the one mentioned by Dr Mathers as having been found by him in eight cases of poliomyelitis in Chicago, was found in every one of the thirty-five cases studied by us in cultures made from the secretions from the noses and throats of these patients and in cultures of spinal fluid from four of these cases A detailed account of the morphologic, biologic and biochemical characteristics of this gram-positive diplococcus appears on page 438 of the 'Annual Report of the Commissioner of Health of Pennsylvania" for 1907

So far as we were able to determine, this gram positive micro-organism seemed to correspond with the coccus found by Geirsvold and by Harbitz and Scheel during the poliomyelitis epidemics in Norway and Sweden, some years before As to pathogenicity, it was shown that on the introduction of 3 c c of a twenty-four-hour bouillon culture of the diplococcus into the peritoneal cavity of each of several guinea-pigs no deleterious effects were observed One c.c of a twenty-four-hour bouillon culture inoculated subcutaneously at the root of the tail of a white mouse had no pathogenic effect

A loopful of the culture of the gram-positive diplococcus, isolated from spinal fluid, was introduced high up into each naris of a monkey, with only negative result Spinal fluid containing these diplococci was injected into a monkey's spinal canal on two different occasions without causing the least harm

Two thirds of the surface growth of a twenty-four-hour agar culture of the gram-positive diplococcus isolated from the spinal fluid of Case 34 was emulsified in 2 c c sterile normal salt solution and injected into the spinal canal of a monkey On the next day his legs and tail showed a spastic, not a flaccid, paralysis His temperature rose to 102 8 and afterward rapidly declined to normal The paralysis disappeared two days later and the animal seemed to regain perfect health His spinal fluid contained a very high percentage of polymorphonuclears and but few mononuclears or lymphocytes Gram-positive diplococci were recovered from this spinal fluid in pure culture by incubation in bouillon

This animal showed no symptoms of poliomyelitis but rather those of an acute meningitis At the monkey's sudden death fourteen days after intraspinal injection of the culture of diplococci the necropsy showed a violent hemorrhagic meningitis bearing no resemblance to poliomyelitis Microscopic sections showed an intense polymorphonuclear infiltration with congestion involving the meninges of cord and brain and the superficial layers of the cortex There was no round cell infiltration of the anterior horns of the gray matter of the cord

As a result of these experiments therefore we concluded that the gram-positive diplococcus as found in these thirty-five cases of poliomyelitis had nothing to do with the disease

In the epidemic of 1910 further opportunity was given to experiment with the gram-positive diplococcus This organism was isolated from the nasal secretions of all of our cases and found in smears from portions of the brain and cord of these cases as also in the smears and cords of all the monkeys dying of poliomyelitis In three instances in which the spinal fluid from as many different cases was received at the laboratory the diplococcus was found in the smears from the sediment and isolated in pure culture

The details of these studies may be read in the 'Annual Report of the Commissioner of Health of Pennsylvania for 1910 and on p 479 the following general statements were made

> We are not able to produce poliomyelitis by inoculation into the brains of monkeys of a filtrate of plain bouillon and monkey blood bouillon cultures of the gram-positive diplococcus found in nearly all of our cases
>
> In our attempts to produce paralysis in rabbits by inoculation of a suspension of a diplococcus in bouillon in one instance, in the case of Rabbit No 81 we seem to have been successful although the histological examination of the cord did not show typical lesions of poliomyelitis and we were unable to reproduce the disease in another rabbit by the inoculation of brain and cord of Rabbit No 81 into his brain
>
> Our conclusion as to the role the diplococcus plays in the causation of poliomyelitis is that it is not the principal etiological factor It may be symbiotic in its relation to the essential factors and is probably essential in itself to the growth and development of the principal agent in the infection We believe that it has something to do with the causation of the disease in the light of our constantly finding it in all secretions and nervous tissues from cases of poliomyelitis

Samuel G Dixon M D, Harrisburg Pa
Commissioner of Health Commonwealth of Pennsylvania

Destruction of Molds in Stock Solution by Copper Sulphate

To the Editor —In hospitals and laboratories where 0 5 per cent solution of acetic acid is used to make leukocyte counts it will often be found that the stock solution will soon have growing in it a mold that forms macroscopic white flakes in the solution Besides these large collections of fungi there are myriads of small ones that only the microscope can detect These molds interfere with the proper spreading of the leukocytes over the counting chamber and often give rise to either erroneous counts or to guesswork on the part of the intern or technician doing the work. It seems that filtering the solution does not help since the next day the solution is usually again filled with enough fungi to interfere with the count I have found the following simple means to be effective in keeping the solution clean of these molds A trace of copper sulphate in the solution does the work and 1 gram of copper sulphate crystals in a liter (quart) of the solution is more than enough and does not interfere in any way with the leukocytes Even rinsing the stock bottle with a 1 per cent solution of copper sulphate will leave enough of the salt in the bottle when it is filled with the 0 5 per cent acetic acid

Josff Sfilin, M D, Chicago

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed Every letter must contain the writer's name and address but these will be omitted on request

BUROW'S SOLUTION

To the Editor —I am at sea regarding the proper preparation of Burow's solution since reading your answer to my letter in Queries and Minor Notes Sept 30 1916 I have been accustomed to direct my pharmacist to put up Burow's solution according to the National Formulary whereas I find as you say that the new formulary has reverted to the old (?) method wherein lead acetate is used Can you give me the reasons for this change other than the saving of time?

I contend that the peculiar advantage of Burow's solution lies in the continuous giving off for a longer time of fresh (nascent?) acetic acid Without any carefully conducted experiment I have observed that the solution prepared according to the previous method with aluminum sulphate acetic acid and calcium carbonate apparently has this property of gradually releasing its acetic acid whereas the lead acetate method and in particular the solution of a previously prepared powder when put to use gives off its acetic acid at once and in a short time is relatively odorless just as one would expect of a simple solution of acetic acid in water

I should esteem it a great favor if you would clear up this confusion for me There must be many others in the same state as myself

Joseph S Lewis M D, Buffalo

Answer—In 1857, according to O Raubenheimer (*Proc Am Pharm Assn*, 1909, p 1036), Dr August Burow, professor of surgery at the University of Konigsberg, prescribed a 'solution of alum and a solution of sugar of lead to be mixed and then filtered after allowing the precipitate to subside' Burow used this original solution for the open antiseptic treatment of wounds Subsequently, in the "Manual des New Yorker Deutsche Pharmazeutischer Vereins," published in 1858, the following appeared

LIQUOR ALUMINIS ACETICI

℞	Aluminis crudi	Partes decem
	Plumbi acetici	Partes septemdecim
	Gas hydrothionic	
	Aquae ana sufficientem quantitatem	

The hydrogen sulphid was used to remove all the lead enough water was added to make 48 parts In later years one finds various modifications of this formula used, based on the same principle, but usually employing an excess of sulphate in order to insure the conversion of all the lead to the practically insoluble lead sulphate rather than removing lead as lead sulphid by means of hydrogen sulphid A decided improvement was made by Eugene Dieterich (Dieterich Pharmaceutical Manual, Ed 9, 1904 p 265) in the substitution of aluminum sulphate for alum (potassium aluminum sulphate) This obviated the unnecessary presence of potassium sulphate and made the solution less dense Dieterich claimed that the lead sulphate would precipitate more completely when aluminum sulphate is used

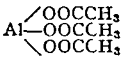
Unfortunately the 'name Burow's solution was often applied to any solution of an acetate of aluminum such as solution of aluminum acetate 'solution of aluminum subacetate' solution of aluminum and sodium acetate' etc, using varying formulas also the term aluminum acetate was frequently used for aluminum subacetate as for instance in the third edition of the National Formulary Hence much confusion resulted

In view of this Raubenheimer, in an address before the American Pharmaceutical Association in 1909, proposed that Burow's solution be described in the next edition of the National Formulary (now fourth edition) as 'liquor aluminii acetatis made according to special directions by treating a solution of 150 gm of lead acetate [$Pb(C\,H_2O\,)\,3H\,O$] with a solution of 85 gm of aluminum sulphate crystals [$Al\,(SO_4)_3\,16H\,O$]

$$3Pb(C\,H_3O\,) + Al\,(SO_4)_3 \rightarrow 2Al(C\,H_2O\,)_3 + 3PbSO_4$$

The precipitated lead sulphate is filtered off and the solution made up to 1 000 c c This is the formula now used

The solution contains about 5 per cent of neutral aluminum acetate

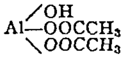


$$Al{<}\begin{matrix}OOCCH_3\\OOCCH_3\\OOCCH_3\end{matrix}$$

The old solution of aluminum acetate (N F III) in reality was a solution of aluminum subacetate, as shown by G C Diekman (*Druggists Circular,* 1908, p 224) This is now properly described in the new edition of the National Formulary as "liquor alumini subacetatis," prepared according to the following equation

$$Al (SO_4)_3 + 3CaCO_3 + 4HC_2H_3O \longrightarrow 2Al(OH)(C\ H_3O\ )_2 + 3CaSO_4 + 3CO\ + 2H\ O$$

It contains about 8 per cent of basic aluminum acetate



$$Al{<}\begin{matrix}OH\\OOCCH_3\\OOCCH_3\end{matrix}$$

As a precaution in preparing either of the foregoing solutions, one must bear in mind that the aluminum sulphate of the National Formulary IV, contains 16 molecules of water of crystallization, whereas the aluminum sulphate of some foreign pharmacopeias, and much of the chemically pure product, contains 18 molecules As would be expected, the normal or neutral aluminum acetate is more permanent than the basic The basic often "gelatinizes" during the preparation

We believe that our correspondent erred in his observations concerning the liberation of acetic acetate The normal aluminum acetate would be hydrolyzed by water according to the equation

$$Al(C\ H_3O\ )_3 + HOH \rightleftarrows Al(OH)(C\ H_3O\ )\ + HC\ H_3O_2$$

If sufficient acetic acid is removed, the solution would contain the basic acetate The basic acetate, however, is hydrolyzed, but less easily

$$Al(OH)(C_2H_3O\ )_2 + HOH \rightleftarrows Al(OH)\ (C_2H_3O\ ) + HC_2H_3O_2$$

On prolonged boiling, the dibasic acetate would be further hydrolyzed to $Al(OH)_3$ In this connection, it is well to point out that aluminum hydroxid is amphoteric, that is, it ionizes both as a base and an acid

$$3H^+ + AlO_3^{\equiv} \rightleftarrows Al(OH)_3 \rightleftarrows Al^{+++} + 3OH^-$$

Although acetic acid is considered a weak acid, nevertheless all of its salts of aluminum, when in solution, would be distinctly acid and, as would be seen, the neutral salt would liberate the greatest amount of acetic acid The acetic acid thus liberated is not different in character or 'nascent" It is quite likely the therapeutic action of the acetate of aluminum is due, to a certain extent, to the freed acetic acid, the concentration used (0 5 per cent) being conducive to a high degree of hydrolysis, but it is also likely that its action is not due *entirely* to the acetic acid, but, in a large measure, to the aluminum ion

LIQUOR AMMONII ANISATUS — RECIPROCITY WITH NEW YORK

To the Editor —Please advise me 1 As to the origin and uses of liquor ammonii anisatus 2 What states reciprocate with New York

W Franklin Wood M D Boston

Answer —1 Liquor ammonii anisatus is an old preparation with somewhat obscure origin It is described in several of the foreign pharmacopeias, although the proportions of the several ingredients differ slightly in the various books The following is a typical formula

Oil of anise	3
Alcohol	77
Ammonia water	20

The dose is from 1 to 4 c c (15 to 60 minims) It has been used as a carminative and mild nervous sedative, but is rarely prescribed in this country

2 Delaware, Indiana, New Jersey, Ohio, Utah, Virginia and Wisconsin

SANITARY PAPER MILK BOTTLES — ADDRESS OF MANUFACTURERS WANTED

A correspondent desires the name and address of firms making sanitary paper milk bottles which are being recommended by many health officers as a substitute for the present glass containers for the retail distribution of milk We believe there are several firms manufacturing such bottles and should be glad to have their addresses

Death an Alleviation —It is by no means a fact, that death is the worst of all evils, when it comes, it is an alleviation to mortals who are worn out with suffering —Metastasio

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arkansas Regular, Little Rock, Nov 14 Sec Dr T J Stout Brinkley Homeopathic, Little Rock Nov 13 Sec Dr Scott C Runnels 900 Scott St, Little Rock Eclectic Little Rock Nov 14 Sec Dr C E Laws 712 Garrison Ave, Fort Smith

Connecticut Regular New Haven Nov 14 15 Sec Charles A Tuttle, 196 York St, New Haven Homeopathic, New Haven Nov 14 15 Sec Dr E C M Hall 82 Grand Ave, New Haven Eclectic New Haven Nov 14 Sec Dr T S Hodge, 19 Main St Torrington

Delaware Dover and Wilmington Dec 12 14 Sec Dr H W Briggs 1026 Jackson St, Wilmington

Florida Regular Palatka, Dec 5 6 Sec Dr E W Warren Palatka Homeopathic Jacksonville Nov 10 Sec Dr J B Griffin St Augustine

Kentucky Louisville, Dec 12 14 Sec Dr A T McCormack Bowling Green

Louisiana New Orleans Nov 30 Dec 2 Sec Dr E L Leckert 716 Macheca Bldg New Orleans

Maine Portland Nov 14 15 Sec Dr Frank W Searle 776 Congress St, Portland

Maryland Regular Baltimore Dec 12 Sec Dr J McP Scott 137 W Washington St, Hagerstown

Massachusetts Boston Nov 14 16 Sec Dr Walter P Bowers Room 501, No 1 Beacon St, Boston

Missouri St Louis Dec 11 13 Sec, Dr J A B Adcock Jefferson City

Nebraska Lincoln Nov 8 9 Sec, Dr E Arthur Carr Lincoln

Nevada Carson City Nov 6 Sec Dr S L Lee Carson City

Ohio Columbus Dec 5 7 Sec Dr George H Matson State House Columbus

Rhode Island Providence Nov 15 16 Sec Dr Gardner S Swarts 70 Waterman St Providence

South Carolina Columbia Nov 14 Sec Dr A Earle Boozer, 1606 Hampton St Columbia

Texas Fort Worth Nov 14 16 Sec Dr J S McCelvey Temple State Bank Bldg Temple

Virginia Richmond, Dec 15 18 Sec Dr J N Barney Fredericksburg

West Virginia Parkersburg Nov 14 Sec Dr S L. Jepson State Health Commissioner Charleston

California June Report

Dr C B Pinkham, secretary of the Board of Medical Examiners of the State of California, reports the oral and written examination held at San Francisco June 26-30, 1916 The total number of subjects examined in was 9, total number of questions asked, 90, percentage required to pass 75 The total number of candidates examined was 125, of whom 115 passed, including 11 osteopaths, and 10 failed, including 6 osteopaths Thirty-eight candidates were licensed through reciprocity Two osteopaths were licensed through reciprocity Twelve candidates were granted drugless practitioner's license and 4 chiropodist's license The following colleges were represented

College PASSED	Year Grad	Per Cent
College of Medical Evangelists (1915) 81 7 89 1 (1916) 86 86 5 89 ?, 89 9 90 9		
Coll of Phys and Surgs Los Angeles (1916) 80 7 81 81 3 84 8 85 7, 86 1 86 7 87 89 1 91 5, 91 9 92 92 2 93 8		
Coll of Phys and Surgs San Francisco (1905) 87 2 (1915) 78 4 84 (1916) 80 82 1 84 5		
Hahnemann Med Coll of the Pacific (1915) 88 9 (1916) 78 1 80 9, 81 9 82 4 82 7, 84 4 84 7 88 1 88 9		
Leland Stanford Junior University (1915) 88 2 (1916) 78 1 81 2 83 4 83 5 84 84 1 84 9 85 2 86 86 3 86 8 88 2 88 5 90 3 90 8 91 2, 93 93 4 94 9 95 5		
University of California (1903) 75 (1916) 83 86 86 1 86 1 86 2 86 5, 86 7 87 2 88 4 88 7 88 8 89 89 1 89 9 90 3 90 5 91 1 91 1 91 1 91 5 91 8 91 9, 92 92 92 5 93 1 93 6 93 9 95 4		
Oakland College of Med and Surg	(1916)	88 3 94 7
Hahnemann Med Coll and Hosp Chicago	(1916)	88 9
Rush Med College	(1915)	91 8
Johns Hopkins University (1905) 89 4 (1911) 87	(1914)	85 8
Boston University	(1914)	81 7
Harvard University	(1913)	92 2
St Louis University	(1904)	76 8
Jefferson Medical College	(1915)	84 2 86 1
University of Pennsylvania (1915) 89 7	(1916)	84 5
Vanderbilt University	(1915)	81 3
McGill University	(1912)	75
Univ of Central Spain Madrid	(1903)	87
FAILED		
College of Phys and Surgs San Francisco	(1914)	72 2
John A Creighton Medical College	(1913)	67 8
School of Med and Pharmacy of Jalisco Guadalajara	(1901)	63 8
Imperial University Kyoto	(1910)	67 4

College LICENSED THROUGH RECIPROCITY	Year Grad	Reciprocity with
Denver and Gross Coll of Med	(1907)	Washington
American Med Missionary Coll Chicago	(1909)	Michigan
Bennett Coll of Eclectic Med and Surg	(1898)	Illinois

Chicago College of Med and Surg		(1914)	Illinois
Chicago Homeopathic Med College		(1886)	Ohio
College of Phys and Surgs Chicago		(1901)	Illinois
Hahnemann Med Coll and Hosp Chicago		(1890)	Nebraska
Rush Medical College		(1902)	Washington
University of Illinois		(1907)	Illinois
Central Coll of Phys. and Surgs		(1896)	Indiana
Indiana University		(1911)	Indiana
Sioux City College of Medicine		(1907)	Iowa
Kentucky School of Medicine		(1889)	Texas
University of Louisville		(1908)	Georgia
Tulane University of Louisiana		(1895)	Washington
Baltimore Medical College		(1911)	Oregon
Johns Hopkins University		(1912)	Maryland
University of Maryland	(1907) Ohio	(1908)	N Carolina
University of Michigan Medical School		(1909)	Ohio
University of Minnesota		(1901)	Minnesota
Columbian Med Coll Kansas City		(1899)	P I
Kansas City Medical College		(1904)	Kansas
St Louis Medical College		(1878)	Missouri
St Louis University		(1906)	Missouri
Washington University		(1912)	Missouri
Albany Medical College	(1906) New York	(1914)	Mass
Eclectic Medical Coll Cincinnati		(1901)	Ohio
Medical College of Ohio	(1882) Ohio	(1903)	Montana
University of Cincinnati		(1911)	Nevada
Jefferson Medical College		(1904)	Penna
University of Pennsylvania		(1892)	Arizona
University of Pittsburgh		(1909)	Penna
University of the South		(1904)	Penna
University of Toronto		(1911)	New York
Imperial University Tokyo		(1899)	Washington

Kansas June Report

Dr H A Dykes secretary of the Kansas State Board of Medical Registration and Examination reports the written examination held at Topeka June 13-14 1916 The total number of subjects examined in was 10, total number of questions asked 100 percentage required to pass 75 The total number of candidates examined was 20 all of whom passed Thirty-nine candidates were licensed through reciprocity The following colleges were represented

PASSED

College	Year Grad	Per Cent
College of Physicians and Surgeons Chicago	(1912)	79 9
University of Kansas	(1916)	81 7 82 82 5 83 5 83 7 84 2 84 6 85 1 85 3 87 7 89 5
Tulane University of Louisiana	(1916)	85 6
Harvard University	(1914)	88 4
National University of Arts and Sciences	(1916)	88 3
Southwest School of Med and Hosp	(1916)	76 3 77 8 79 7 79 7 81 7

LICENSED THROUGH RECIPROCITY

College		Year Grad	Reciprocity with
Northwestern University	(1892) Oklahoma	(1914)	Illinois
College of Physicians and Surgeons Chicago		(1912)	Illinois
University of Illinois	(1913) Oklahoma	(1915)	Missouri
Hospital College of Medicine Louisville		(1906)	Kentucky
Kentucky School of Medicine		(1882)	Kentucky
Louisville National Medical College		(1905)	Kentucky
University of Louisville	(1896) Missouri	(1907)	Tennessee (1914) (1915) Kentucky
Johns Hopkins University		(1910)	Missouri
Boston University		(1900)	New Jersey
Eclectic Med Univ Kansas City	(1906) (1911)	(1915)	Arkansas
Ensworth Medical College		(1894)	Missouri
Kansas City College of Med and Surg		(1916 9)	Arkansas
Kansas City Hahnemann Med Coll	(1910) Missouri	(1912)	Arkansas
National Univ of Arts and Sciences	*(1913) (1914)*	*(1915)*	Missouri
St Louis University		(1905)	Illinois
University Med Coll Kansas City	(1911) Missouri	(1913)	Oklahoma
Omaha University		(1896)	Nebraska
Western Reserve University		(1914)	Ohio
Jefferson Medical College		(1915)	Missouri
University of Pennsylvania		(190)	Penna

New Hampshire June Report

Dr W T Crosby secretary of the New Hampshire State Board of Medical Examiners reports the oral and written examination held at Concord June 26 28 1916 The total number of subjects examined in was 12, total number of questions asked 60 percentage required to pass, 75 The total number of candidates examined was 7 of whom 5 passed and 2 osteopaths failed Three candidates were granted reregistration licenses Eleven candidates were licensed through reciprocity The following colleges were represented

PASSED

College		Year Grad	Per Cent
Boston University		(1915)	83
Tufts College Medical School	(1914) 85	(1916)	79 81
Harvard University		(1898)	95

LICENSED THROUGH RECIPROCITY

College		Year Grad	Reciprocity with
Johns Hopkins University		(1915)	Maryland
University of Maryland		(1883)	Mass
Harvard University	(1885)	(1911)	Mass
Tufts College Medical School	(1903) (1911) (1913)	(1915)	Mass
Dartmouth Medical School		(1905)	Mass
Fordham University		(1915)	New York
McGill University		(1888)	Mass

Book Notices

Skin Cancer By Henry H Hazen A B , M D Professor of Dermatology in the Medical Department of Georgetown University Cloth Price, $4 Pp 251 with 98 illustrations St Louis C V Mosby Company, 1916

The larger part of this book is devoted to a description of the various tumors of the skin In this Dr Hazen has not confined himself strictly to malignant growths but has considered in addition not only precancerous growths of the skin, but also numerous cutaneous tumors which are in no sense related to malignant growths, such as benign epithelial proliferations and many benign connective tissue tumors—keloid fibroma, neuroma myoma lipoma etc—lesions which have only the most remote relationship to malignant tumors While these inclusions increase the usefulness of the book in some ways they detract from it as discursive and not germane to its purpose It is noted with surprise that the author considers sarcoid with sarcoma This is particularly to be regretted because it tends to increase the already existing confusion produced by the unhappy name sarcoid Further there is no reason to consider it with sarcoma or, indeed in a book on cancer of the skin Sarcoid is neither a tumor nor a cancer and it is not related to sarcoma The descriptions of the symptoms and causes of malignant growths of the skin are adequate and clear The last few chapters in the book are devoted to differential diagnosis prognosis prophylaxis and treatment These chapters are all good In the chapter on treatment the various methods of treating cutaneous cancers are fully considered and the attitude is conservative The book is a useful summary of our knowledge of cutaneous cancer and will be found valuable for reading or for reference Some of the author s views such as his belief in the infectiousness of cancer are not conclusively established The book is well printed but many of the illustrations are poorly reproduced This applies especially to the photomicrographs, many of which are so ill defined as to be valueless

A Manual of Practical Laboratory Diagnosis By Lewis Webb Hill M D Graduate Assistant Children s Hospital Boston Cloth Price $1 50 Pp 179 with illustrations Boston W M Leonard 1916

The author states that it has been his aim to include the information which an everyday practitioner wants but to weed out carefully all tests and methods which are not of ordinary clinical application or which require for their performance complicated apparatus and trained technicians He has succeeded admirably in giving us a book which offers to students and house officers the technic for the necessary routine of daily laboratory practice Theoretical considerations are not introduced to confuse the worker thus adding to the practical working value of the book The tests given are those which are well recognized and established The more technical and elaborate tests are eliminated as they are not ordinarily performed by those for whom the book is intended The style is clear and the illustrations are adequate

Clinical Disorders of the Heart Beat A Handbook for Practitioners and Students By Thomas Lewis, M D D Sc F R C P Assistant Physician University College Hospital London Third Edition Cloth Price $2 net Pp 116 with 54 illustrations New York Paul B Hoeber 1916

This is practically a reprint of the first edition of 1911 There are some slight changes in the text however and the statistical tables show different figures as they embody the author s experience of the last five years The real addition is the chapter of eleven pages on auricular flutter The favorable comments elicited by the other editions need not be here repeated The practitioner or student who desires to understand cardiac irregularities according to modern conceptions will find nowhere else within the same number of pages such a clear and succinct exposition It is to be understood that in this book Lewis discusses the irregularities as studied without the aid of the polygraph or electrocardiograph

Social Medicine, Medical Economics and Miscellany

THE INVERACITIES OF ANTIVIVISECTION*

W W KEEN, M D, LL D
Emeritus Professor of Surgery Jefferson Medical College
PHILADELPHIA

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It seems to be curiously impossible for the antivivisectionists to make straightforward, accurate statements of fact, or even accurate quotations As to the latter, I have shown in my book very many misquotations, mistranslations, omissions, and even interpolations not in the originals

Two recent instances and a third of a somewhat older date, corroborating my statement, occur in two antivivisection journals, the *Open Door*, p 5 of the issue for April, 1916, and the *Journal of Zoophily* for May, 1916, p 74, and the Philadelphia *Public Ledger* of Dec 19, 1913

Dr Wile of the University of Michigan made a small trephine opening in the skulls of six persons who had become insane as a result of paresis The syphilitic nature of this disease, which is a frequent cause of insanity, has been long suspected and partly proved Wile removed a very small portion of the human brain tissue from these patients and injected it into rabbits The result of this injection proved conclusively that the brain tissue in these cases was full of the active germs of syphilis and that syphilis is the cause of the paresis

These investigations, however, in my opinion, were wholly unjustifiable This opinion, too I know is shared by others who, like myself, are warm advocates of research by animal experimentation The very fact that we can obtain information of the greatest value to animals and human beings alike by experiments on animals (which are almost identical with human beings both in structure and function) is the strongest reason why we should utilize animals instead of human beings Hence I wish to register here my condemnation of Dr Wile's experiments and a protest against any similar experiments in the future

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(Excerpts from *Jour Experimental Medicine* Rockefeller Institute, Feb 1 1916)

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Then follow a number of "excerpts" from Dr Wile's paper, also in quotation marks, with running commentaries

Any incautious reader would think that Professor Slosson was a red-handed vivisectionist, and also that the quotation from Professor Slosson was a part of Dr Wile's paper—a sort of motto expressing Wile's own sentiments Not a word of this quotation from Professor Slosson appears in Dr Wile's original paper It is thrust into the text to catch the eye and mislead the reader Professor Slosson's communications appear in the *Independent* for Dec 12, 1895, p 1679, and Feb 13, 1896, p 207

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But while changing the wording of an excerpt as in this case is blameworthy, a far more important sin is an inexcusable but evident intention to make a wrong impression on the mind of the reader by this isolated, unqualified quotation In his paper, Professor Slosson was urging young men to devote a lifetime of labor to the advancement of knowledge as the highest of human callings It was an appeal for a life of self-sacrifice and devotion to scholarship even at the cost of *their own* lives Among the fields of research he specified physics, mathematics geography and pathology, sciences in which vivisection is never employed He expressly disclaimed (p 208) any reference to the sacrifice of other people Could anything be clearer than the following additional quotation which I take from Professor Slosson's paper?

> IF HE [THE INVESTIGATOP] SUCCEEDS HIS VERY NAME IS SOON DROPPED FROM THE PARAGRAPH HE HAS ADDED TO THE WORLD'S KNOWLEDGE THIS IS AS IT SHOULD BE IT IS FITTING THAT HIS NAME SHOULD BE FORGOTTEN WHILE THE TRUTH FOR WHICH *HE* GAVE *HIS LIFE* SHALL LIVE FOREVER

Viewed in this new light, and recalling the many martyrs of science, who would not say that Professor Slosson was absolutely right? Such juggling with words, even though the very words of the author, should receive the sternest reproof

At the time when he wrote the article from which the quotation is taken, Professor Slosson was professor of chemistry in the University of Wyoming He had never done then nor has he ever done since, any experiments on animals Yet quoted apart from the text and without the explanation I have just given, readers of the article in the *Open Door* would inevitably think that he was an ardent advocate even of human vivisection

Later in his paper, Professor Slosson considers vivisection, but again the sacrifice of human life to which he alludes is the lives of the experimenters themselves

While condemning Dr Wile, I wish, however, to be just to him Dr Wile used every precaution known to science—careful disinfection, an efficient anesthetic, great care in selecting a location where no harm would be done to the brain functions, and the prompt recovery of all the patients showed that his precautions were efficacious It may be objected that Wile used no anesthetic in the brain itself This was wholly unnecessary as the brain has *no feeling whatever* I well remember a case thirteen years ago—a terrible crush of the top of the skull with loss of much bone and brain substance Three days after the accident when I was slicing and even scraping away some of the protruding brain substance, the patient, fully conscious (as there was no need for an anesthetic) suffered not the least pain, but shook with laughter when I told him "he had too much brains" and I was scraping some of them away I saw him within a year in perfect condition physically and mentally

As Dr Wile did not state in his article whether the patients lived or died, I inquired as to the results Dr Victor C Vaughan, dean of the University Medical School, in which Dr Wile works, assures me that *not one* of the patients suffered any ill effects

Only of late has syphilis been definitely recognized as the principal cause of paresis, which blights not only the body but so often eventually destroys the mind Remedies—even salvarsan—which may be efficient in curing syphilitic affections in other parts of the body do not reach the germs in the brain These are peculiarly virulent As a result of Dr Wile's researches it may hereafter become possible in the early stages of the disease to kill these germs even in their remotest stronghold We may then be able to combat this dreadful affliction and restore both the bodies and the minds of these unfortunates

Another misrepresentation of Wile's investigation appears in the *Journal of Zoophily* It says, "A long-nozzled syringe was inserted and a *syringeful* of brain contents was extracted" Dr Wile's paper distinctly states that "a small cylinder of gray and white matter with some fluid from the ventricle was removed" No "syringeful" was removed but only a "small cylinder" like part of a pin

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* See The Right and Wrong of Making Experiments on Human Beings editorial this issue p 1372

The sneer of the *Journal of Zoophily* that Dr Wile "used apparently only a local anesthetic" shows either ignorance or wilful misrepresentation Many hundreds—or rather thousands—of operations have already been done on human beings by "only a local anesthetic" without pain It is a surgical method of anesthesia as well recognized as that by ether or chloroform, and has largely supplanted other anesthetics in certain operations because of obvious surgical advantages

The *Journal of Zoophily* is the last paper which should urge any objection to 'human vivisection' for its late editor-in-chief, Mrs Caroline Earle White, was an avowed advocate of "human vivisection"

Replying to an address of my own in which I asserted that experiments "must not be tested first upon man" she asserted, "on the contrary that in the majority of cases they *must* be tested *first* upon man or not tested at all' Now if no new method nor any new drug had ever been tried, either on animals or man, it is evident that we should today be still practicing the medicine and surgery of the middle ages

Still further Mrs White opposed my plea for attempting by experiments on animals to discover an antidote to snake venom which in India kills over 20 000 human beings every year She actually proposed that "the experimenters go to India where they could find as large a field as they require in the *poor victims themselves* Here is an opportunity such as is not often offered for *experimenting on human beings* since as they would invariably die from snake bite there can be no *objection to trying upon them every variety of antidote that can be discovered"* This she declared, 'is the one case in which they could be observed with so *much satisfaction and certainty upon man* [all italics my own] Could there be a more cruel—and as elsewhere I also have shown—a more absurd proposal?

But New York and Philadelphia must not claim superiority in misstatements over Boston In the Philadelphia *Public Ledger* of Dec 19 1913 Mrs Jessica L C Henderson, a resident of a suburb of Boston and a vice president of the American Antivivisection Society, said

> WE EAGERLY OFFER OUR CITATIONS IN THE HOPE THAT THE PUBLIC WILL TAKE THE TROUBLE TO VERIFY THEM DOCTOR CRILE'S BOOK, FROM WHICH THE ANTIVIVISECTIONISTS QUOTED ACCURATELY REPEATEDLY DESCRIBES EXPERIMENTS FOLLOWED BY THE WORDS NO ANESTHESIA' THE BOOK HAS BEEN WITHDRAWN FROM PUBLIC SALE

I at once challenged both statements As to the latter statement the book has never been withdrawn No more copies were for sale (except possibly second hand) simply because the entire edition had been 'sold out the publishers inform me

As to the first charge I asked Mrs Henderson to give me the pages on which the words "no anesthesia" "repeatedly' occurred She assured me in reply "that at the first opportunity I shall vindicate my reputation ' Then began a series of excuses and subterfuges The days and the hours are all too few" Next it is her 'firm conviction that the edition has been recalled and another issued" in which these culprit words were omitted This was disproved by the statement to me by the publishers (J B Lippincott Company), which I communicated to her that only one edition of Crile's book on "Shock' had ever been printed She said also that she had advertised for a copy and when she obtained it she would at once comply with your [my] request for the page numbers' Thereupon I sent her my own copy, asking her to return it with the pages indicated After a long interval it was returned, but without any marked pages

Next she claimed that she had not indicated which book by Dr Crile was the one in which these words appeared! To this I replied that I had all of Dr Crile's books and if she would indicate which was the guilty one I would send it to her at once This offer was never accepted As a matter of fact in her letter to the *Public Ledger* she *did* indicate which book it was for she described it as the one from which the antivivisectionists quoted accurately These quotations I have compared with Dr Crile's book on shock and found that they *were* taken from his book on shock and for a wonder they were accurately quoted I have "repeatedly" reminded Mrs Henderson that I am 'eagerly' awaiting her "vindication" by giving me the pages, but a long period of eloquent silence has followed I despair of ever receiving them A good reason exists—there are no such pages

Why should she not follow the example of her illustrious co-worker the late Mrs White? The latter had stated that certain experiments were done on 'between forty and fifty children" and that every one of them died When the fact was pointed out to her that "lumbar puncture" (now an every-day and often indispensable means of diagnosis) was done on only twenty-seven living children of whom only fourteen died (not one of whom died from the lumbar puncture, but from the various diseases of which they were the victims), she promptly and publicly acknowledged her error Mrs Henderson owes it to Dr Crile but above all to herself, to acknowledge that her statement was incorrect and to offer an apology to Dr Crile Had Mrs Henderson's charge been private, my reply would have been also private, but her charge was specific and public, and made in a very widely circulated and responsible newspaper, hence my public reply

But what can one expect from persons who heartlessly call the recent terrible epidemic of infantile paralysis as the Summer's Foolish Panic' and the New York Infantile Paralysis Epidemic a Fake" and commend the treatment by the Chinese who "divide the human body into twelve sections all connected by interlacing nerves each section being 'rooted in some vital organ' ! (*Open Door* October, 1916)

1729 Chestnut Street

Medicolegal

Care Required to Prevent Escape of Patients from Private Institutions

(Torrey vs Riverside Sanitarium (Wis) 157 N W R 552)

The Supreme Court of Wisconsin affirms a judgment for the defendant which was sued for damages for personal injuries alleged to have been caused the plaintiff by shock and fright from a partly clad patient coming to her home and demanding the use of the telephone and asking for some clothes Two days before the patient had voluntarily come to the sanatorium accompanied by a male relative His physician had previously informed the superintendent that he seemed to be in a confused state of mind and had had certain obsessions for a couple of days, and wanted him kept under observation to see whether his mental condition was a mere brain trouble or the result of some acute disease like typhoid fever coming on The second night the patient got up, dressed and left the institution without permission or the knowledge of the night nurse. He returned in the morning To prevent any recurrence like that, he was told that it was desired to transfer him to another department to which he said All right ' He got out of bed and with his underclothes on and a blanket thrown over him was conducted by a bath attendant from his room up a stairway toward the men's hall He seemed to go with perfect willingness The superintendent followed them along the corridor to the foot of the stairway and then proceeded toward his office The patient and attendant walked side by side up stairs when he suddenly threw off the blanket of which the attendant had hold and, pursued by the attendant made his escape running across the fields until he came to the plaintiff's dwelling house as stated above The jury found that the defendant did not exercise ordinary care while transferring the patient, that such want of ordinary care was the proximate cause of her injury, and that the sum which would reasonably compensate her for her injuries was $1,000 On motion the trial court changed the answer as to the failure to exercise ordinary care and rendered judgment for the defendant which is affirmed by the supreme court The latter says that doubtless it is incumbent on the defendant and its employees at all times during the treatment of nervous and insane patients

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Right of Selecting Physician

(Pecott vs American Mut Liability Ins Co et al (Mass), 112 N E R 217)

The Supreme Judicial Court of Massachusetts reverses a decree which confirmed an award of $50 in favor of the plaintiff, who sought compensation under the workmen's compensation act The plaintiff was injured in a mill in which he was employed, near noon when the mill closed In the afternoon the pain from the injury became intense and he consulted a physician, who advised an operation, and performed one for hernia on the following Wednesday At the time the plaintiff was injured there were posted in the mill printed notices informing employees that in case of injury one of two other physicians named was to be called, 'bills of other physicians will not be paid by the insurance company" The court says that, under the workmen's compensation act, the reasonable medical services required during the first two weeks after the injury are to be furnished by the insurer the duty of supplying medical aid being imposed on the insurance company, with the obligation of paying therefor The right to select the attending physician is given to it by the statute It is evident that the legislature, in passing this act, did not intend to give the employee the privilege or right of selecting his own physician at the expense of the insurer Under the amendment of 1914 where a physician other than the one provided is called in case of an emergency, or for other justifiable cause, the insurer is required to pay for this service, if in the opinion of the industrial accident board the charge is reasonable and the cause of employment justifiable The purpose of the legislature in passing this amendment was not to deprive the insurer of the right to select its own physicians By this change in the law, provision was made for the case of emergency, where there was imminent danger, where the suffering and pain were severe where immediate attention was required and the services of the insurance physician could not be obtained in time to give relief The amendment was also intended to apply to a situation where there was no actual emergency, but where the employee, acting as a reasonable man, would be justified in refusing the care of the physician selected by the company In this case there was no evidence which justified the plaintiff under the statute in neglecting to secure the services of either of the physicians named in the notices He could read and speak English, the notices were conspicuously posted, and the court thinks he was charged with knowledge of them and their contents His ignorance of his rights under the workmen's compensation act could not excuse him from compliance with its terms

Society Proceedings

COMING MEETINGS

American Academy of Ophthal and Oto Laryn, Memphis Dec 11 13
American Association of Anatomists New York Dec 27 29
Medical Association of the Isthmian Canal Zone, Ancon Dec 16
Society of American Bacteriologists New Haven Conn Dec 26
Southern Medical Association Atlanta Nov 13 16
South Surg and Gynec Assn, White Sulphur Spgs W Va Dec 11 13
Western Surgical Association, St Paul Dec 15 16

AMERICAN ROENTGEN-RAY SOCIETY

Seventeenth Annual Meeting held at Chicago Sept 27 30 1916

The President, Dr A W Crane, Kalamazoo, Mich, in the Chair

SYMPOSIUM ON ROENTGEN THERAPY

Roentgen Therapy of Skin Affections

Dr H W Dachtler, Toledo, Ohio In 530 cases occurring on the face and lips, treated during the past seventeen years, in which the history is complete, excluding carcinoma involving the neck, clinically 62 per cent were diagnosed as malignant Of sixteen cases involving the forehead, there was but one failure, chin, 8 cases, all cured, neck, 7 cases all cured, upper lip, 18 cases, 16 cured, nose, 110 cases, 102 cured, cheek, 95 cases 81 cured, external ear, 25 cases, 20 cured, eyelids, 145 cases, 134 cured, lower lip, 57 cases, 52 cured Three patients with erythematous lupus were not benefited by the treatment Seven cases of lupus gave discouraging results, three patients being cured Of eleven patients with keloid, all were so much improved as to be classed as cured The end-results in this series compare more than favorably with the results obtained by other methods covering a like period of time

Roentgen Therapy of Tuberculous Peritonitis

Dr Paul Eisen, Chicago Of eleven cases of tuberculous peritonitis treated with deep therapy, operation was performed in seven before the treatment was instituted, thus verifying the diagnosis beyond any doubt, the other four were diagnosed from clinical symptoms, including roentgenographic findings Of the seven patients operated on before treatment, four have been entirely cured and one still under treatment is getting well Of the remaining four patients not operated on, in whose cases the diagnosis was based on clinical symptoms alone, two are still under treatment and improving, one was well after six months' treatment and the fourth discontinued treatment after two weeks In all but two cases there was a steady increase in weight The amount of rays given was different in each case I judge the dose to be employed by the gain in weight, a steady gain of 1 pound a week being desired and often more attained The accumulation or disappearance of free fluid must be taken into consideration in cases in which it is present In the one unsuccessful case I also added ultraviolet rays to the rest of the body to help raise its immunity, but without success

Treatment of Nevi

Dr W S Newcomet Philadelphia All "birth marks" should be treated as soon after birth as is practicable Some of these nevi, particularly the moles, tend to become malignant Of the true nevi, the best results are to be expected in the cavernous type, in which the veins are covered with healthy skin, here several methods are available The electric needle, galvanism, or diathermy will destroy these enlarged veins without injuring the overlying skin If, however, the skin is involved with discoloration of the superficial layer, then the application of radium will give the best results The most difficult nevus to treat and to obtain a result that is cosmetically good is the superficial and widely disseminated variety Radium, high frequency and the ultraviolet light have been employed The pigmented nevus when not too deep, will yield most satisfactory results under radiation, either from the Roentgen rays or from radium If the area is wide, the use of the Roentgen ray is attended with some danger from overtreatment of the underlying parts

When the nevus is thick and leathery the cosmetic result is questionable The fact that these nevi are covered with hair does not seem to have any effect on the result. In the more severe types of nevi, radiation offers the best means for their eradication The scar tissue produced from the application of caustics and similar methods depending on cauterization leave them extremely sensitive to radiation and at times ulceration is difficult to avoid The results under such circumstances are extremely poor

Present Status of Roentgen Therapy of Leukemia

Dr H K Pancoast Philadelphia Successful results require care in the preliminary treatment of the active period of the disease persistence in treatment until every manifestation has disappeared a careful watch over the patient thereafter, and a resumption of applications on the appearance of the first evidences of a relapse The institution of modern methods of deep therapy in leukemia modified to suit the peculiar condition has shortened the time for inducing a primary symptomatic cure in our cases and the average prolongation of life has perhaps, been slightly increased but the ultimate results have not been altered We still advocate the use of small doses of arsenic in those cases in which progression ceases and the condition remains stationary without further improvement and also those in which there is a low red count or the red corpuscles or hemoglobin are diminishing In recent years, benzene (benzol C_6H_6) has become a strong competitor of the Roentgen ray as a therapeutic agent in leukemia but when results have been carefully compared we believe that the latter is to be preferred and is safe The results of the past few years show that Roentgen therapy is the most successful and the safest agent known in the treatment of leukemia

Discussion on Roentgen Therapy

Dr W A Pusey Chicago My views with regard to epithelioma are the same as I held ten or twelve years ago When the deep structures or adjacent glands are involved it is not a case for Roentgen therapy but a mass of epitheliomatous tissue on the surface of the body can be destroyed effectively with the Roentgen ray When the lesion is situated on the eyelid the Roentgen ray is very valuable because you can cure the lesion and save the eyelid which you cannot do if you resort to surgery In the case of lesions in the inner canthus or intra-orbital fat my experience has not been good As to epithelioma of the lower lip some surgeons maintain that every such case should have a radical incision including cleaning out of the neck. That sounds good but in some cases it is not a feasible procedure If I had a superficial epithelioma of my lower lip no surgeon could cut it out. My rule is to touch no case wherein operation is practicable, unless it is one in which you may expect there is no involvement of the glands under the jaw In cases in which the deep structures are involved the surgeon should have the first chance, but the probabilities of a cure by any method are extremely remote I do not think that the Roentgen ray is best for the treatment of most vascular nevi I treat pigmented nevi with the Roentgen ray to the point of getting a reduction and getting rid of the hairs then I try to smooth up the surface with the careful use of carbon dioxid snow One must be very careful in these cases, because the Roentgen ray has produced hyperemia of these tissues and endarteritis in the smaller vessels When one uses carbon dioxid snow one must use very weak applications for a very short period of time For vascular nevi I have ceased to use the Roentgen ray In some flat vascular nevi I have obtained perfect results, they disappeared completely In large angiomatous nevi I often get a great shrinking and a great improvement although at times I do not succeed so happily In the flat nevi one is apt to get some telangiectasia, which interferes with the result Radium in nevi gives the same results as the Roentgen ray The objection to radium is that in using an applicator one must treat small areas and one is apt to checkerboard the skin For flat vascular nevi the best treatment at present is the ultraviolet ray from the quartz lamp This gives beautiful results without any unpleasant after-effects In the cavernous angiomas I use radium, the Roentgen ray or carbon dioxid snow, depending on the case and the results I am trying to produce As to the Roentgen treatment of tuberculous peritonitis I too have had a considerable experience with it My results have been quite in accord with Dr Eisen's One patient was treated surgically, as well as with the Roentgen ray The former failed, the latter succeeded She has remained well for twelve years I see no reason why we should be surprised that the Roentgen ray does not cure leukemia or pseudoleukemia It affects only the adenoid tissue I have seen cases cured symptomatically and improvement was maintained for a considerable period of time I believe that Roentgen ray offers more prospect of amelioration than anything else. I have not seen any toxic effects from the use of the Roentgen rays in leukemia I have always given very light exposures, which may account for my experience

Dr George C Johnston Pittsburgh Regarding the treatment of tuberculous peritonitis with the Roentgen ray if the abdomen has been opened previously the atmosphere has played its part If the patient is exposed to the Roentgen ray afterward we cannot claim for it the credit of a cure I have seen cases of tuberculous peritonitis cured without the use of the Roentgen ray in which the abdomen was opened and closed

Dr Kennon Dumham Cincinnati Dr Savage of Cincinnati is carrying on investigations in cattle. He uses ether without opening the abdomen or letting any air into it. Murphy of the Rockefeller Institute has shown that great good could come by raising the lymphocyte count, and it is here that the Roentgen ray may prove valuable.

Dr George E Pfahler, Philadelphia I believe that, properly used the Roentgen ray is useful in tuberculosis in different parts of the body but the work must be controlled and studied carefully I was very much interested in Murphy's work on the lymphocyte count I made a series of investigations in a number of cases that I treated but did not find any more variation in these cases than in the average case My experience with the lymphocyte count was discouraging Regarding epithelioma of the lip I destroy the tumor with the high frequency current and then give deep Roentgen therapy over the lip and the glandular area leading therefrom I am getting better results than from the Roentgen ray alone or from surgery As to nevi I have had most satisfactory results by destroying the lesion by means of the high frequency current and then using the Roentgen ray afterward to prevent the formation of keloids In cases of flat nevi I have seen the best results from the use of the quartz lamp although I have not used it myself In leukemia I have been following Dr Pancoast s method and my results correspond with his The early results are brilliant three or four or five years later there is a sudden relapse and the patient dies

Dr. W S Newcomet, Philadelphia I know of two cases in which the Roentgen ray accomplished what benzene failed to do Radium therapy is at present where the Roentgen ray was fifteen years ago and our results will not be good until our technic is better and that cannot be improved while we know so little about radium The flat applicator is worthless The tubes are the best no matter what strength of radium they contain But a better method for using radium must be found The great trouble is the cost and the manipulation

Dr H K Pancoast Philadelphia I treated a number of cases of tuberculous peritonitis some years ago Patients with fluid and tubercles all over the peritoneum usually recover but when there is a thick plastic exudate the outcome is not so good Dr Pusey spoke about the small dosage in leukemia. That is a method with which we were able to accomplish much where others had failed In the cases of acute lymphatic leukemia a great deal of harm is still being done the final outcome is hastened I recall an instance in which I was asked by mail to give some advice as to the treatment of such a case I replied urging them not to use the Roentgen ray If I had wired my answer the fatal outcome in that case might have been postponed

(To be continued)

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Sixty Sixth Annual Meeting held at Scranton Sept 18 21 1916

(*Continued from page 1329*)

Diabetic Gangrene

Drs John H Jopson and E H Goodman, Philadelphia Judging from the favorable result of the treatment of diabetes by the Allen method, it is perhaps not too much to hope that, with careful consideration of every case of uncomplicated diabetes, diabetic gangrene may be prevented We believe that diabetic gangrene is only a manifestation of an infection on the basis of lowered tissue resistance plus arteriosclerosis in most cases There is, however, no specific organism of diabetic gangrene The rational treatment of diabetic gangrene should be dietetic and local Should the condition progress in spite of the strict observance of Allen's dietetic method together with proper local measures, then the indications for amputation must be considered These indications are extension of the local process with signs of septicemia and high glycosuria, or extension of the local process with signs of septicemia in the presence of acidosis However, in the presence of septicemia, even with low glycosuria or sugar-free urine operation may be indicated A high percentage of glycosuria in no way contraindicates operation, although it is better to reduce the urinary sugar if possible When the local and general conditions become grave, operation should not be deferred Our experience has shown that fasting should give place to free feeding some time before operation We favor the use of alkalies in large enough doses to render the urine alkaline before operation, and prefer to administer sodium bicarbonate by mouth and by proctoclysis Water is given freely before operation, and operation may be performed under local anesthesia Ether and chloroform are contraindicated with patients giving a history of glycosuria

DISCUSSION

Dr Moses Behrend, Philadelphia It has been my experience that results of operation after the Allen treatment have been far superior to any other form of treatment There is another form of gangrene in diabetes It is an insidious form of localized gangrene which occurs around the extensor tendons of the toes It is a grave symptom, and the prognosis in all these cases must be guarded Death results whether or not operation is performed

Attitude of the Department of Labor and Industry Toward the Problem of Occupational Diseases

Mr. John Price Jackson, Harrisburg Since the inauguration of the system of accident compensation, January 1 of this year, between 50,000 and 60,000 injured workmen have received compensation But 2 per cent of these cases were appealed to referees This law has not been paternal in its operation, but has offered an effective medium for the amicable settlement of claims The matter of division of payment between hospitals and physicians, and the inclusion within the scope of the law of vocational or occupational diseases are problems to be adjusted by succeeding legislatures The difficulty arising in the latter problem is the question of what constitutes occupational disease The Pennsylvania Department of Labor and Industry is inclined to believe that strictly vocational diseases should be treated under the compensation law in the same manner as industrial accidents Great care, however, in the preparation of such legislation is necessary Reports on occupational diseases should be made to the bureau of statistics of the department and clinics on occupational diseases might be established throughout the state In the matter of the proposed compulsory health insurance, we face the problem of maintaining individual freedom, initiative and self-reliance against the advantages of community action It has also been argued in favor of compulsory health insurance that many of the poorer population do not have needed medical attention A system of compulsory health insurance which will not deprive our people of the ability to care for themselves is undoubtedly desirable The medical profession of the state, possibly headed by a commission appointed by the legislature and the governor, should give most careful attention to health insurance and its corollary, old age insurance If such attention is not given, the movement may result in a paternalistic injurious governmental system

DISCUSSION

Dr. J W Schereschewsky, Washington, D C Commissioner Jackson has outlined two problems of greatest concern to those interested in social medicine (1) whether certain occupational diseases shall be included in the scope of the compensation act, and (2) whether the United States shall establish systems of health insurance There has been a general objection to industry bearing the economic loss due to certain forms of occupational disease This attitude gives rise to many inconsistencies For example, a man may be suddenly overcome by benzene fumes while waterproofing a tank On the other hand, a girl working in a cannery may become chronically poisoned by the fumes of benzene with resulting death The only difference in the two cases is the period of time in which death was produced The inference is logical that if compensation is due in the first instance it is equally so in the second Social insurance must be regarded as our next most important social advance It is obvious that if the cost of social insurance were conditioned in a special locality or industry by the general prevalence of disease, it would create a strong financial stimulus to preventive measures

Dr H F Smyth, Philadelphia In deciding on the role of an occupation in the cause of disease we must consider the individual's previous occupation, his general health and physique, his personal habits and home hygiene as well as the general hygiene of the plant in which he is employed and the special precautions taken to minimize the particular hazard As Dr Jackson says, the definite occupational diseases are limited in number To increase this list of compensable diseases, full reports on all occupational diseases should be made compulsory The tabulation should show also the proportion of diseased to healthy individuals in the industry or process The adoption of general health insurance for workmen would minimize some difficulties of decision, but I doubt whether this country is yet ready for this

Dr James I Johnston, Pittsburgh A case coming under my observation and illustrating some of the complexities of this subject was that of a coal miner who sustained a fractured rib injury, for which he was, of course, entitled to compensation We all know how conducive this occupation is to fibroid phthisis This man claims that he does not recover, and a diagnosis has been given of established tuberculosis It is not improbable that the man had tuberculosis and that when injured his resistance was lowered, as a consequence of which the tuberculosis became active How to meet the situation and treat the man justly is difficult to determine

Dr Francis D Patterson, Harrisburg I believe the medical profession of Pennsylvania should formulate a definition of occupational disease which will stand an 'acid test" On behalf of the Department of Labor and Industry I want to make a plea that the department be given opportunity to gather definite statistics on such diseases

SYMPOSIUM ON FIRST AID

The Railroad Phase

Dr Joseph B Hileman, Harrisburg The problem of first aid on the Pennsylvania Railroad has been to provide a suitable simple dressing and to instruct the employees in its use The first aid packet is air and moisture proof and is distributed in tin boxes which hold six dressings On the outside are printed instructions for its use and a tag bearing an order for a fresh box as soon as the seal is broken These packets are placed wherever they may be of use Stretchers and blankets are supplied to all baggage, mail, express and work cars, stations and shops Employees are taught to confine themselves strictly to first aid and in severe cases to send for the nearest physician The dangers of infection and hemorrhage are pointed out No drugs or whisky are to be given Employees are taught methods of resuscitation from electric shock by means of the Schäfer method The results have been most satisfactory

Injuries Common to Policemen and Firemen and Their First Aid Treatment

Dr Hurley R Owen, Philadelphia The principles of first aid treatment of injuries are to stop hemorrhage, keep the wound clean and put the part at rest We use the army tourniquet, wounds are swabbed with iodin An immunizing dose of antitoxin is given in all cases of punctured wounds, only one case of tetanus has developed in the fire department since 1871 In shock we use morphin freely Whisky is not a good remedy for smoke cases We use six pulmotors in the fire department

DISCUSSION ON FIRST AID

Dr J B Carnett, Philadelphia Unfortunately it is not often possible to have at the scene of accident the surgeons and equipment described by Dr Owen The fact that more than a million serious accidents occur each year in the United States urgently demands more widespread knowledge of first aid A great many lives have been saved each year by the prompt application of first aid, and many more could have been saved had the principles of intelligent first aid been more generally known It is no doubt true that in exceptional instances first aid teaching when perversely applied may lead to meddlesome surgery or even to disastrous results Such deplorable instances fortunately are rare, and are overwhelmingly counterbalanced by the great number of lives that are saved by intelligent first aid attention First aid should be included among the subjects taught in the public schools

Dr W F Skinner, Chambersburg With reference to burns generally a good rule to follow is the washing of the parts with Castile soap and warm water, using pledgets of cotton for the removal of foreign matter and then applying normal salt solution, heavy dressings of gauze and parchment paper

Dr A W Colcord Clairton The tourniquet must never be made tight enough to stop hemorrhage, only the spurting from the wound The remaining hemorrhage must be stopped by direct pressure on the wound The iodin treatment for wounds is the best for application at the roadside the private home, hotel, or anywhere outside of the hospital In emergency hospital work the constant wet dressing is the best This is made of a saturated solution of boric acid one fourth and alcohol three fourths It is applied directly to the wound In several thousand cases we have not had a primary infection

Dr Edward Martin Philadelphia The emergency which is commonest is not the fatal hemorrhage, or the discrimination between uremia apoplexy, heat exhaustion or sunstroke, but infection, and there is no concerted view as to how infection should be treated in emergency, excepting that it should not be treated by fingers It is time to formulate our knowledge

Modern Hospital Organization in Rural Pennsylvania

Dr Harold L Foss Danville Pennsylvania, with a population of about 6 000 000 outside of the large cities has about 150 hospitals good bad and indifferent Fully 90 per cent of these have no trained laboratory worker, not over 20 per cent of them are prepared for Roentgen therapy or fluoroscopy Whenever a young member of the staff attempts to develop a laboratory he receives such poor cooperation that he soon becomes discouraged The recent requirement of an internship of one year on the part of those applying for license to practice medicine has led to great improvement in these conditions Organization is first and last the paramount factor in efficiency Staff appointments should be only on merit. The success of the rural hospital will depend largely on the education of the people, the training of the general practitioner, a clearly defined need for a hospital in the community the construction of an adequate and well equipped institution, a sound financial basis, a competent and efficient administrator, a broad, sensible policy, thorough and scientific care of the sick, individual investigation of the financial resources of all patients and discouragement of undiscriminating charities, and an efficient system of purchasing

DISCUSSION

Dr T B Appel, Lancaster We should all agree on the importance of the development of the laboratories The modern hospital particularly in a small town, is in a sense an educational institution for the profession

Dr A R Allen, Carlisle The present board of medical examiners has done more to elevate the medical profession and bring the hospitals up to the standard than all the work done heretofore in Pennsylvania

Dr Frederick L Van Sickle, Olyphant Because of compensation laws and workmen's insurance, the manufacturer and the mine and mill owner are willing to pay somebody well to get the sick man cured Therefore the efficiency of the smaller rural hospital must be increased

Dr John B Roberts, Philadelphia Some things must be obtained for efficiency, first, a permanent medical dictator The damnation of small and large hospitals is the fact that nobody is boss and every man who comes on duty every six weeks orders something different

Dr. J M Baldy, Philadelphia The matter rests with the staff of the hospital If they rise to the opportunities that have now come to them for the standardiaztion of their institutions, we will be patient We found in our inspection that from 75 to 80 per cent of the work done in the rural districts was surgical and that, of that, about 75 to 80 per cent was emergency work How can the Bureau of Medical Education and Licensure send an intern into such a hospital for his fifth year? If this condition is not altered, such institutions will simply get a credit for second or third year internship and be classified as special hospitals

Treatment of Deformed Union and Nonunion of Fractures

Dr. John B Roberts, Philadelphia Deformed union of bone is usually due to lack of knowledge of efficient treatment of the fracture or to neglect in applying well-known mechanical or physical principles to the problem of treatment Operative exposure for remedying deformed union of bone is demanded in only a limited number of cases Subcutaneous refracture for the correction of angular deformity is comparatively easy This procedure is available and successful for a long period after the fragments have been firmly united After-treatment is on the same lines as in accidental fracture Repair in delayed union should be hastened by massage and good food, air and surroundings, and the interrupted use of constriction with a rubber band at the proximal side of the fracture There should not be too hasty resort to operation in nonunion Use of the limb and rubbing the ends together by manipulation, and injection of blood hypodermically into the tissues around the fracture are helpful When these measures fail, operative treatment is demanded

Ligation of the Superior Pole of the Thymus in Operating for Goiter

Dr Lever F Stewart, Clearfield In dissections which I have made in the majority of cases, the inferior thyroid arteries gave branches to the superior pole of the thymus In some instances this branch is given off on only one side In one out of ten cases no such branch is given off Ligation of the inferior thyroid artery close to the gland does not touch its branch to the thymus As a result the thymus may become congested and enlarged Ligation of the superior pole of the thymus would circumvent this and in addition have a favorable influence on the thyroid participating in the disease

DISCUSSION

Dr G T Matlack Wilkes-Barre In my experience in doing thyroidectomy it is rarely that we see the enlarged thymus We have removed three enlarged thymus glands, but not in exophthalmic goiter We are looking for it all the time and do not find it I believe we shall have to give the thyroid credit for most of the evils

Dr Charles H Frazier, Philadelphia I rather feel disposed to take the view that Dr Matlack has as to the importance of the thymus gland in the intoxication we see associated with the enlarged thyroid I have not found in my clinic, and I have been looking for it, any coincident enlargement of the thymus in thyrotoxicosis

Dr George C Johnston, Pittsburgh The relation between the thymus and thyroid in cases of thyrotoxicosis is a very doubtful one Practically there is little connection Many of these cases of undoubted thymus are diagnosed as aneurysm or mediastinal tumor but if you place the patient in the recumbent posture you will find that the thymus drops over and gives the shadow of a dog's ear It is so unusual that it is absolutely diagnostic

Cholecystectomy the Operation of Choice

Dr A Ralston Matheny, Pittsburgh Gallstones do not constitute a disease per se, but are always a sign of a previously diseased gallbladder which, once diseased, either remains a nidus of infection or, as a result of inflammation, loses its function Therefore, it is reasonable to remove it if the risk is no greater than drainage would be If we remove the gallbladder except where it is necessary for drainage we shall avoid the unpleasant experience of an unimproved patient and removal of the gallbladder by another surgeon

DISCUSSION

Dr J A Lichty Pittsburgh I should rather have a live patient with the gallbladder in than a dead patient with the gallbladder out

Dr Ernest Laplace Philadelphia Only one reason stands in our way of removing the gallbladder, the supposititious one that it is a necessity to functionating of proper digestion It has been proved that it is not Therefore why preserve an organ that is not of essential use to the system? I remove all gallbladders and hesitate only when the necessary time required for proper work might jeopardize the life of the patient Not that I fear the after-results, but that the doing of this operation in the correct way at the time does not seem possible

Dr John H Jopson Philadelphia When I began to remove gallbladders the mortality of cholecystectomy was higher than cholecystostomy With the improvement of technic the mortality is no more than in cholecystostomy, and end-results are very much better I am still taking out gallbladders which I formerly drained I think when a gallbladder is acutely inflamed and patchy with gangrene as in some cases of acute pancreatitis, or in occasional cases of infection of the gallbladder, we would better let it alone

Dr. Harold L Foss, Danville There is no question about the value of cholecystectomy as there are cases in which there is a history of recurrence of stone I recently performed a cholecystectomy on a patient operated on three times before for gallstones When the gallbladder was removed we counted over 500 shotlike millet seeds That patient had been drained three times before

Conservative Treatment of Puerperal Sepsis

Dr E E Montgomery Philadelphia My experience leads me to condemn the resort to operative interference in cases of infection as being prejudicial to the patient It is better to keep the patient clean and trust to Nature rather than to interfere surgically The objection to early surgical interference is that the organs have already passed beyond the reach of surgical measures, and these only break down barriers which Nature has instituted I should advocate the use of autogenous vaccines prepared from the blood of the patient, and in cases in which these could not be obtained, the employment of prepared serums, even horse serum Measures that should be instituted are those to promote effective elimination and immunity I should not hesitate to employ surgical measures even sacrificial surgery, in those cases in which the organs are destroyed and are simply foci for further extension of disease

DISCUSSION

Dr. G E Shoemaker, Philadelphia Radical measures, as usually understood, are not required in the management of puerperal sepsis The maternity infections which come to us are not those patients whom we have ourselves delivered We are, therefore, without a history which is reliable as to the absence of retained pieces of placenta Other patients come to us as the result of criminal interference and there we have no history Other cases have been examined hastily and recognized and unloaded on the hospital In these cases we must change our attitude as to noninterference We must never forget that these patients tend to recover of themselves In regard to an active interference by a cutting operation, I hesitate to do it above the pubis unless absolutely obliged to do so

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

Annals of Surgery, Philadelphia

October LXIV No 4

1 *Exophthalmic Goiter A J Ochsner Chicago —p 385
2 *Surgical Treatment of Goiter M F Porter Fort Wayne Ind —p 395
3 *Results of Surgical Treatment of Exophthalmic Goiter V C David Chicago —p 400
4 Surgical Treatment of Perforated Ulcer of Stomach A O Wilensky New York —p 403
5 Nine Consecutive Operations for Perforated Gastric and Duodenal Ulcers J F Shea Bridgeport Conn —p 410
6 Case of Rupture of Common Bile Duct Associated with Subphrenic Abscess H C Bumpus Jr Rochester Minn —p 414
7 Anomalies of Gallbladder and Bile Passages Review of Literature and Report of Double Gallbladder and Floating Gallbladder A Schachner Louisville Ky —p 419
8 *Interpretation of Functional Renal Tests with Special Reference to Significance of Minimal Excretion of Phthalein and Indigo carmin E Beer New York —p 434
9 Traumatic Injuries of Kidney and Ureter Review of Literature and Report of Nine Cases H G Bugbee New York —p 459
10 *Os Calcis Fracture F J Cotton Boston —p 480

1 **Exophthalmic Goiter**—Summarized Ochsner's rules for goiter patients are as follows Avoid all excitement or irritation get an abundance of rest, by going to bed early and taking a nap after luncheon Have an abundance of fresh air at night Eat and drink nothing that irritates the nervous system Do not use tobacco Eat very little meat If very fond of meat, take a little beef, mutton or breast of chicken or fresh fish once or twice a week or at most three times a week Drink a great deal of milk or eat things that are prepared with milk, cream and buttermilk are especially good Avoid any kind of meat broths Eat an abundance of cooked fruits and cooked vegetables, or very ripe raw fruits or drink fruit juices prepared out of ripe fruits Eat eggs bread, butter, toast, rice and cereals Drink an abundance of good drinking water, or if this is not available, boil the drinking water for twenty minutes or drink distilled water Ochsner claims that with the exception of a very small number of cases in which an insufficient amount of the gland had been primarily removed, or in which the remnant which had been left at the primary operation had increased in size, and which have had a recurrence, he has almost invariably found that they had either disregarded the directions given regarding diet and rest and hygiene following their operative treatment, or they had been permitted to return to their homes without definite instructions in this direction It is, therefore, very important that written or printed directions be given these patients and that they be thoroughly impressed with the importance of using these directions

2 **Surgical Treatment of Goiter**—In Porter s opinion it should be the rule to remove all permanent goiters whether they are producing symptoms or not He says that were this rule followed there would be fewer cases of toxic goiter There is as much reason for removing so called simple goiters with a view to preventing them from becoming toxic

as there is for removing or curing by surgical means certain lesions such as warts, moles, and chronically inflamed areas, to prevent them from becoming malignant

3 **Surgical Treatment of Exophthalmic Goiter**—Of 200 successive patients with exophthalmic goiter operated on at the Presbyterian Hospital, Chicago, prior to December, 1914, David says, eleven or 5 5 per cent, died in the hospital To ascertain the condition of the patients who had been operated on more than a year previously a series of questions were addressed to them Sixty-five answers were received A percentage of 38 were cured and 40 per cent were greatly benefited Of thirty-five patients having exophthalmos before operation only thirteen or 37 per cent, reported themselves relieved from it The duration of symptoms before operation in the patients cured was sixteen months, in those greatly benefited was twenty-three months, and in those not improved was thirty-three months

8 **Functional Renal Tests**—Extrinsic causes (usually obstructive in character), Beer says, may lead to permanent symmetrical renal damage evidenced by minimal or zero excretion of phthalein and indigocarmin associated usually with high blood urea and high incoagulable nitrogen blood content Operation in these cases will be of no permanent benefit, and even the slightest (in one case the passing of a cystoscope) may bring on a fatal uremia Similar extrinsic causes may lead to temporary renal damage evidenced by the same phenomena as Type 1 Operation in these cases, particularly after adequate preliminary treatment will be rarely followed by uremia These two wholly different types of cases can be differentiated by removal of the usual causative factor that is relief of the obstruction either by use of indwelling catheter or regular catheterization or by preliminary cystostomy under local anesthesia or gas If the case is of Type 1 no marked change in the renal output will result whereas if the case is of Type 2, the renal output will regularly improve

A similar low combined output may be caused reflexly (inhibitive or toxic) by more or less extensive disease of one kidney, while the other kidney is adequate and improves in its function after removal of its diseased mate, or after relief of the pathologic condition in its mate A low combined output may also be due to bilateral intrinsic causes and improvement in these cases is possible only after operative attack on the kidneys or the kidney if single under an anesthetic which has no injurious effect on the diseased kidney parenchyma and provided no severe wound infection or other septic etc complications which overtax this parenchyma develop

10 **Os Calcis Fracture**—Briefly the method the late Louis Wilson and Cotton worked out together and which has proved very satisfactory clinically is as follows (1) loosen up the fracture by manipulation (2) pull the heel down with ice-tongs, (3) free the joint motion between astragalus and calcis, (4) push in the displaced bone under the external malleolus by slowly striking with a big mallet on the outer side of the foot padding with felt to take the blow, supporting the inner side of the foot on a sand bag This impacts, and owing to the fact that the outer plate is firm, the impaction is usually fairly solid, (5) put the foot up in plaster, with the heel-cord slack, avoid direct pressure on the heel

Archives of Pediatrics, New York

October XXXIII No 10

11 *Case of Lymphosarcoma of Sigmoid A L Goodman New York —p 721
12 Clinical Study of Sixty Cases of Postnasal Infections Six Cases Complicated by Acute Hemorrhagic Nephritis G E Baxter Chicago —p 729
13 Eosinophilia Occurring in Infants Following Ingestion of Foreign Protein H C Berger Kansas City Mo —p 742
14 Infant for Adoption J B Manning Seattle Wash —p 750
15 Case of Chondrodystrophy J F Sammis New York —p 755
16 Sixty Eight Blood Examinations in Infancy with Review of Recent Literature H M McClanahan and A A Johnson Omaha —p 757
17 Ruptured Appendix Found at Necropsy in Infant Suffering from Colon Bacillus Infection of Urinary Tract F Van der Bogert Schenectady N Y —p 772
18 *Use of Salt Solution by Bowel (Murphy Method) in Infants and Children E E Graham, Philadelphia —p 775

11 **Lymphosarcoma of Sigmoid**—Goodman reports the case of a girl aged 4 years, who had chronic constipation and bleeding from the rectum accompanied with extreme pallor and marked weakness, which commenced about three weeks before admission At the same time the mother noticed a hard lump in the baby's abdomen The child was in very good health up to four months before its entrance into the hospital Previous to this time the bowels had been fairly regular About two weeks before the appearance of the blood, the mother noticed that the child would have severe abdominal cramps before an evacuation of the bowels During the three weeks previous to her admission, there would be severe straining at stool, but no fecal matter would be expelled but at times small quantities of pure blood At one time half a pint of pure blood passed during one of these severe attacks of straining These attacks became more frequent and for the three days preceding admission, the child would have two or three movements of pure blood during the day The mother noticed that the lump in the abdomen would change its position from day to day, and that it had grown larger in size The child was operated on four days after admission A tumor of the sigmoid about 6 inches in length, and 3 inches in width was found with metastatic lymph nodes in the mesentery, also surrounding the intestine The tumor was removed, the two ends of the intestine one corresponding to that part of the sigmoid just below the splenic flexure of the colon the other to the upper part of the rectum were joined together Four days later the child died with symptoms of a general asthenia Diagnosis—lymphosarcoma of the large intestine

12 **Clinical Study of Postnasal Infections**—Baxter points out that the occurrence of an acute hemorrhagic nephritis as a complication of what at first thought may seem to be a mild cold in the head or a simple earache should teach us the importance of proper care of all simple infections of the upper respiratory tract and the necessity of being constantly alert to the possibility of the development of such a severe complication

18 **Use of Salt Solution by Bowel**—Graham's experience with the Murphy method in treating pylorospasm has been very gratifying and in the case of a 25 days old infant with severe jaundice persistent vomiting and diarrhea, the stools being largely composed of mucus which was black, the employment of this method as a last resort was followed by speedy recovery Graham regards the infusion of normal saline into the bowel by the drop method as a most valuable aid in the treatment of all exhausting diseases of infancy and childhood and believes that by its stimulating effects threatened collapse can often be averted In feeding children and infants who cannot retain nourishment given by mouth, a nutrient enema given drop by drop is often better retained and absorbed than when given more rapidly

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20 Plan of State Department of Health for More Tuberculosis Hospitals E R Kelley Boston —p 524
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27 *Alpha Iodin Active Constituent in Thyroid Its Chemical Nature and Function E C Kendall Rochester Minn —p 557
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29 Clinical Value of Metabolic Studies of Thyroid Cases W M Boothby Boston —p 564
30 Partial Thyroidectomy with Local Anesthesia Scopolamin and Morphin F H Lahey Boston —p 566

Dr Charles H Frazier, Philadelphia I rather feel disposed to take the view that Dr Matlack has as to the importance of the thymus gland in the intoxication we see associated with the enlarged thyroid I have not found in my clinic, and I have been looking for it, any coincident enlargement of the thymus in thyrotoxicosis

Dr George C Johnston, Pittsburgh The relation between the thymus and thyroid in cases of thyrotoxicosis is a very doubtful one Practically there is little connection Many of these cases of undoubted thymus are diagnosed as aneurysm or mediastinal tumor, but if you place the patient in the recumbent posture you will find that the thymus drops over and gives the shadow of a dog's ear It is so unusual that it is absolutely diagnostic

Cholecystectomy the Operation of Choice

Dr A Ralston Matheny, Pittsburgh Gallstones do not constitute a disease per se, but are always a sign of a previously diseased gallbladder which, once diseased, either remains a nidus of infection or, as a result of inflammation, loses its function Therefore it is reasonable to remove it if the risk is no greater than drainage would be If we remove the gallbladder except where it is necessary for drainage, we shall avoid the unpleasant experience of an unimproved patient and removal of the gallbladder by another surgeon

DISCUSSION

Dr J A Lichty Pittsburgh I should rather have a live patient with the gallbladder in than a dead patient with the gallbladder out

Dr Ernest Laplace Philadelphia Only one reason stands in our way of removing the gallbladder, the supposititious one that it is a necessity to functionating of proper digestion It has been proved that it is not Therefore why preserve an organ that is not of essential use to the system? I remove all gallbladders and hesitate only when the necessary time required for proper work might jeopardize the life of the patient Not that I fear the after-results, but that the doing of this operation in the correct way at the time does not seem possible

Dr John H Jopson Philadelphia When I began to remove gallbladders, the mortality of cholecystectomy was higher than cholecystostomy With the improvement of technic the mortality is no more than in cholecystostomy and end-results are very much better I am still taking out gallbladders which I formerly drained I think when a gallbladder is acutely inflamed and patchy with gangrene as in some cases of acute pancreatitis, or in occasional cases of infection of the gallbladder we would better let it alone

Dr. Harold L Foss Danville There is no question about the value of cholecystectomy as there are cases in which there is a history of recurrence of stone I recently performed a cholecystectomy on a patient operated on three times before for gallstones When the gallbladder was removed, we counted over 500 shotlike millet seeds That patient had been drained three times before

Conservative Treatment of Puerperal Sepsis

Dr E E Montgomery Philadelphia My experience leads me to condemn the resort to operative interference in cases of infection as being prejudicial to the patient It is better to keep the patient clean and trust to Nature rather than to interfere surgically The objection to early surgical interference is that the organs have already passed beyond the reach of surgical measures and these only break down barriers which Nature has instituted I should advocate the use of autogenous vaccines prepared from the blood of the patient, and in cases in which these could not be obtained, the employment of prepared serums, even horse serum Measures that should be instituted are those to promote effective elimination and immunity I should not hesitate to employ surgical measures even sacrificial surgery, in those cases in which the organs are destroyed and are simply foci for further extension of disease

DISCUSSION

Dr G E Shoemaker Philadelphia Radical measures, as usually understood, are not required in the management of puerperal sepsis The maternity infectic us are not those patients whom we hav ered We are, therefore, without a histor as to the absence of retained pieces of patients come to us as the result of crimina there we have no history Other cases hav hastily and recognized and unloaded on these cases we must change our attitude as to We must never forget that these patients of themselves In regard to an active interfe ting operation, I hesitate to do it above th absolutely obliged to do so

(To be continued)

Current Medical Literat

AMERICAN

Titles marked with an asterisk (*) are abstracted

Annals of Surgery, Philadelphia

October LXIV No 4

1 *Exophthalmic Goiter A J Ochsner, Chicago—p 385
2 *Surgical Treatment of Goiter M F Porter Fort Wa p 395
3 *Results of Surgical Treatment of Exophthalmic Goite David Chicago—p 400
4 Surgical Treatment of Perforated Ulcer of Stomach Wilensky New York—p 403
5 Nine Consecutive Operations for Perforated Gastric and D Ulcers J F Shea Bridgeport Conn—p 410
6 Case of Rupture of Common Bile Duct Associated with Sub Abscess H C Bumpus Jr Rochester Minn—p 414
7 Anomalies of Gallbladder and Bile Passages Review of Lite and Report of Double Gallbladder and Floating Gallbl A Schachner Louisville Ky—p 419
8 *Interpretation of Functional Renal Tests with Special Referen Significance of Minimal Excretion of Phthalein and In carmin E Beer New York—p 434
9 Traumatic Injuries of Kidney and Ureter Review of Litera and Report of Nine Cases H G Bugbee New York—p
10 *Os Calcis Fracture I J Cotton Boston—p 480

1 **Exophthalmic Goiter**—Summarized Ochsner's rules f goiter patients are as follows Avoid all excitement o irritation get an abundance of rest, by going to bed earl and taking a nap after luncheon Have an abundance o fresh air at night Eat and drink nothing that irritates the nervous system Do not use tobacco Eat very little meat If very fond of meat, take a little beef, mutton or breast of chicken or fresh fish once or twice a week or at most three times a week Drink a great deal of milk or eat things that are prepared with milk, cream and buttermilk are especially good Avoid any kind of meat broths Eat an abundance of cooked fruits and cooked vegetables, or very ripe raw fruits or drink fruit juices prepared out of ripe fruits Eat eggs bread, butter, toast, rice and cereals Drink an abundance of good drinking water, or if this is not available, boil the drinking water for twenty minutes or drink distilled water Ochsner claims that with the exception of a very small number of cases in which an insufficient amount of the gland had been primarily removed, or in which the remnant which had been left at the primary operation had increased in size, and which have had a recurrence, he has almost invariably found that they had either disregarded the directions given regarding diet and rest and hygiene following their operative treatment, or they had been permitted to return to their homes without definite instructions in this direction It is, therefore, very important that written or printed directions be given these patients and that they be thoroughly impressed with the importance of using these directions

2 **Surgical Treatment of Goiter**—In Porter's opinion it should be the rule to remove all permanent goiters whether they are producing symptoms or not He says that were this rule followed there would be fewer cases of toxic goiter There is as much reason for removing so-called simple goiters with a view to preventing them from becoming toxic

as there is for removing or curing by surgical means certain lesions, such as warts moles, and chronically inflamed areas, to prevent them from becoming malignant

3 **Surgical Treatment of Exophthalmic Goiter**—Of 200 successive patients with exophthalmic goiter operated on at the Presbyterian Hospital, Chicago, prior to December, 1914, David says, eleven or 5 5 per cent, died in the hospital To ascertain the condition of the patients who had been operated on more than a year previously a series of questions were addressed to them Sixty-five answers were received A percentage of 38 were cured and 40 per cent were greatly benefited Of thirty five patients having exophthalmos before operation only thirteen, or 37 per cent, reported themselves relieved from it The duration of symptoms before operation in the patients cured was sixteen months, in those greatly benefited was twenty-three months, and in those not improved was thirty-three months

8 **Functional Renal Tests**—Extrinsic causes (usually obstructive in character), Beer says may lead to permanent symmetrical renal damage evidenced by minimal or zero excretion of phthalein and indigocarmin associated usually with high blood urea and high incoagulable nitrogen blood content Operation in these cases will be of no permanent benefit and even the slightest (in one case the passing of a cystoscope) may bring on a fatal uremia Similar extrinsic causes may lead to temporary renal damage evidenced by the same phenomena as Type 1 Operation in these cases particularly after adequate preliminary treatment will be rarely followed by uremia These two wholly different types of cases can be differentiated by removal of the usual causative factor that is relief of the obstruction, either by use of indwelling catheter or regular catheterization, or by preliminary cystostomy under local anesthesia or gas If the case is of Type 1, no marked change in the renal output will result, whereas if the case is of Type 2, the renal output will regularly improve

A similar low combined output may be caused reflexly (inhibitive or toxic) by more or less extensive disease of one kidney, while the other kidney is adequate and improves in its function after removal of its diseased mate, or after relief of the pathologic condition in its mate A low combined output may also be due to bilateral intrinsic causes and improvement in these cases is possible only after operative attack on the kidneys, or the kidney if single under an anesthetic which has no injurious effect on the diseased kidney parenchyma and provided no severe wound infection or other septic etc, complications which overtax this parenchyma develop

10 **Os Calcis Fracture**—Briefly, the method the late Louis Wilson and Cotton worked out together and which has proved very satisfactory clinically is as follows (1) loosen up the fracture by manipulation, (2) pull the heel down with ice-tongs, (3) free the joint motion between astragalus and calcis, (4) push in the displaced bone under the external malleolus by slowly striking with a big mallet on the outer side of the foot, padding with felt to take the blow, supporting the inner side of the foot on a sand bag This impacts, and owing to the fact that the outer plate is firm, the impaction is usually fairly solid, (5) put the foot up in plaster, with the heel-cord slack, avoid direct pressure on the heel

Archives of Pediatrics, New York

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11 *Case of Lymphosarcoma of Sigmoid A L Goodman New York —p 721
12 *Clinical Study of Sixty Cases of Postnasal Infections Six Cases Complicated by Acute Hemorrhagic Nephritis G E Baxter Chicago —p 729
13 Eosinophilia Occurring in Infants Following Ingestion of Foreign Protein H C Berger Kansas City Mo —p 742
14 Infant for Adoption J B Manning Seattle Wash —p 750
15 Case of Chondrodystrophy J F Sammis New York —p 755
16 Sixty Eight Blood Examinations in Infancy with Review of Recent Literature H M McClanahan and A A Johnson Omaha —p 757
17 Ruptured Appendix Found at Necropsy in Infant Suffering from Colon Bacillus Infection of Urinary Tract F Van der Bogert Schenectady N Y —p 772
18 *Use of Salt Solution by Bowel (Murphy Method) in Infants and Children L L Graham Philadelphia —p 775

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26 Surgery of Thyroid C A Porter, Boston —p 551
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30 Partial Thyroidectomy with Local Anesthesia Scopolamin and Morphin F H Lahey Boston —p 566

31 Treatment of Exophthalmic Goiter by Roentgen Ray M Seymour Boston —p 568
32 Excretion of Hexamethylenamin by Damaged Kidneys G G Smith Boston —p 569
33 Ileocecal Valve and Chronic Intestinal Invalid J Bryant Boston —p 572

27 **Alpha-Iodin, Active Constituent in Thyroid** —It appears from Kendall's investigations that the entire activity of the thyroid is manifested by the administration of alpha-iodin, a crystalline compound, alone There appears to be no other substance in the thyroid secretion which acts directly This substance, given even in very small amounts, will supplant thyroid activity, relieving the conditions of myxedema and cretinism, and in excess will produce symptoms simulating exophthalmic goiter It appears to have no direct action on the pulse rate The extent to which the rate is affected depends not on the administration of the thyroid, but on the simultaneous ingestion of food, and in particular of amino-acids This effect may be outlined as follows After the administration of the compound, there is no apparent effect for many hours There is no increased pulse rate, nor drop in blood pressure However, if the thyroid hormone and amino-acids are injected simultaneously, the pulse rate is enormously affected, and even death may result, due to the apparently great increase in metabolism going on in the animal It appears very probable that the thyroid hormone manifests its activity by reacting in some way with amino-acids

28 **Conditions Affecting Secretion of Thyroid** —To test the effect of overstimulation in a particular region of the sympathetic system, Cannon about two years ago, fused in the cat the anterior root of the right phrenic nerve with the right cervical sympathetic strand Thus, after regeneration had occurred, there was delivered to the neurons in the superior cervical ganglion a volley of impulses every time the animal breathed The operations were performed early in May In October, four of the six animals were still alive All had peculiar symptoms There was marked tachycardia Though fed like normal animals, they had loose movements of the bowels They were unusually excitable The basal metabolism was much elevated In two animals that died of the disease, the suprarenals were found much increased in weight One of the animals had definite exophthalmos and respiratory oscillations of the pupil on the operated side

Since these first observations the disease has been produced in another animal, and it has been proved that the symptoms—rapid heart increased excitability, steadily mounting metabolism with loss of weight—all disappear on the removal of the thyroid on the operated side The metabolism, which had increased approximately 100 per cent dropped to within normal limits Whereas the other animals having the induced disease had died within three months of the first appearance of the symptoms this animal lived normally for seven months after the operation and was then purposely killed The thyroid is subject to that division of the nervous system which is brought into action in emotional excitement, and which causes suprarenal secretion Cannon believes that it is probable, therefore, that the thyroid like the suprarenal, has, normally, functions which are performed in times of critical emergency and that such an emergency function is an exaggerated form of the routine activity of the gland

Delaware State Medical Journal, Wilmington

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34 Diagnosis and Treatment of Poliomyelitis in Preparalytic Stage J A Colliver Los Angeles —p 2
35 Epidemic Cerebrospinal Meningitis Its Diagnosis and Treatment B H Beeler Wilmington —p 11

August No 9

36 Keratitis Report of Case R B Hopkins Milton —p 2
37 What Stomach Symptoms Justify Surgical Intervention M B Tinker Ithaca N Y —p 3
38 Curing Incurable R J Folome Chicago —p 10
39 Anthrax J Palmer Jr Wilmington —p 11

Iowa State Medical Society Journal, Des Moines

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40 Attitude of Public to Physician G N Ryan Des Moines —p 417
41 Pathology of Bacterial Infections J R Allen Waterloo —p 418
42 Examination of Spinal Fluid as Diagnostic Procedure J S Weingart Des Moines —p 422
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44 Technic of Tonsillectomy E F Chase Rochester, Minn —p 429
45 Infections of Lacrimal Sac and Their Treatment C P Cook Des Moines —p 431
46 Hernias of Urinary Bladder A P Heineck Chicago —p 434
47 Industrial Insurance vs Physician G B Palmer, Fort Dodge —p 436

Journal of Biological Chemistry, Baltimore

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48 Study of Certain Dietary Conditions Bearing on Problem of Growth in Rats C Funk New York —p 1
49 *Cottonseed Meal as Incomplete Food C A Wells and P V Ewing —p 15
50 Physiologic Relation of Plant Carotinoids to Carotinoids of Cow Horse Sheep Goat, Pig and Hen L S Palmer Columbia Mo —p 27
51 *Relation of Unidentified Dietary Factors Fat Soluble A and Water Soluble B of Diet to Growth Promoting Properties of Milk E V McCollum, N Simmonds and W Pitz, Madison Wis —p 33
52 *Influence of Ether Anesthesia on Amino Acids of Blood Serum E L Ross Chicago —p 45
53 *Studies on Growth Comparative Value of Lard and Butter Fat in Growth C Funk and A B Macallum, Toronto Canada —p 51
54 *Id Action of Yeast Fractions on Growth of Rats C Funk and A B Macallum Toronto Canada —p 63
55 Reaction Between Amino Acids and Carbohydrates as Probable Cause of Humin Formation M L Roxas Madison Wis —p 71
56 Direct Determination of Urea and Ammonia in Muscle J B Sumner Ithaca N Y —p 95
57 Chymase of Solanum Elaeagnifolium A Bodansky Ithaca, N Y —p 103
58 Separate Determination of Cholesterol and Cholesterol Esters in Small Amounts of Blood W R Bloor and A Knudson, Boston —p 107
59 *Isolation of Growth Producing Substance from Sheep Pancreas W H Eddy New York —p 113
60 *Studies in Creatin Metabolism Possible Interrelations Between Acidosis and Creatin Elimination F P Underhill New Haven Conn —p 127
61 *Id Influence of Alkali on Creatin Elimination During Inanition F P Underhill New Haven Conn —p 141
62 Id Influence of Alkali on Creatinuria of Phlorhizin Glycosuria F P Underhill and E J Baumann New Haven Conn —p 147
63 *Id Relationship of Creatinuria to Carbohydrate Metabolism and Acidosis F P Underhill, and E J Baumann New Haven Conn —p 151
64 Alterations in Output of Certain Urinary Constituents as Determined by Changes in Character of Diet. F P Underhill and L J Bogert, New Haven Conn —p 161
65 Interrelations of Blood Fat and Blood Sugar Content of Dogs Under Influence of Hydrazin F P Underhill and E J Baumann New Haven Conn —p 169
66 *Nutritive Value of Yeast, Polished Rice and White Bread as Determined by Experiments on Man C Funk W G Lyle and D McCaskey New York —p 173
67 Nutritive Properties of Corn A G Hogan Manhattan, Kan —p 193
68 *Colorimetric Method for Determination of Acetone in Urine F A Csonka Pittsburgh —p 209
69 Toxicity of Carotin H G Wells and O F Hedenburg Chicago —p 213
70 Clinical Calorimetry Number of Places of Significant Figures in Data of Metabolism Experiments F C Gephart E F Du Bois and G Lusk, New York —p 217
71 Permeability of Living Cells to Acids and Alkalies A R Haas Cambridge Mass —p 225
72 Acidity of Plant Cells as Shown by Natural Indicators A R Haas Cambridge Mass —p 233
73 *Influence of Bile on Autolysis A L Tatum, Philadelphia —p 243
74 *Rate of Urea Excretion Rate of Excretion of Administered Urea in Young Healthy Adults on Constant Diet T Addis and C K Watanabe San Francisco —p 249
75 Volume of Urine in Young Healthy Adults on Constant Diet T Addis and C K Watanabe San Francisco —p 267
76 Changes in Cholesterol Content of Blood of Goats Following Cholesterol Feeding Alone Roentgen Treatment Alone and Cholesterol Feeding Combined with Roentgen Treatment and Subsequent Castration G Luden Rochester Minn —p 273

49 **Cottonseed Meal as Incomplete Food** —According to Wells and Ewing cottonseed meal is an incomplete food This is true even when it is fed with sugar and starch to a wide nutritive ratio

51 **Relation of Unidentified Dietary Factors to Growth** —The results of nearly 1,000 feeding experiments conducted by

the authors with their rat colony during the last few years all support the working hypothesis explained and supported by experimental evidence in a number of previous papers This assumes the necessity of two dietary essentials as yet unidentified in the diet for growth or prolonged maintenance, namely, the fat-soluble A of butter fat and certain other foodstuffs, and the water-soluble B which the authors have supplied by means of extracts prepared with water or alcohol from several foodstuffs Experimental inquiry has not yet revealed the degree of dependence of animals on a supply of these two dietary factors after growth has been completed The evidence available would seem to point to the necessity of at least one of them, the water-soluble B, throughout life, for extracts which contain it induce relief of polyneuritis, and this may have its incidence at any time during life

52 **Ether Anesthesia and Amino-Acids**—Ross says that the amino acid content of the blood serum of dogs is affected as follows 1 Not materially changed in half an hour by feeding either carbohydrates or meat 2 Increased considerably in four hours after feeding a pound of meat to each dog 3 Not materially decreased by fifteen minutes of ether anesthesia, first, after a week of meat diet, second, after a week of low protein diet, third, half an hour after feeding meat, or fourth half an hour after feeding carbohydrates and fat The decrease at most is not above 40 per cent 4 Decreased 46 to 92 per cent after an amino-acid rise due to four hours of meat digestion

53 **Comparative Value of Lard and Butter Fat in Growth**—The failure of rats to grow on a lard and yeast diet, Funk and Macallum say, is partially due to the development of scorbutic symptoms These can be relieved to a marked degree by using moist instead of dried yeast and still more so by using moist yeast and butter Even in the latter case the existing deficiencies are not entirely corrected, since many rats decline on this diet Rats which fail on lard do not always recover on a diet containing butter It seems also possible that yeast on account of its high content in purins, and perhaps other constituents, is not an ideal addition in experiments of long duration, even in spite of its marked growth promoting power The impaired nutritive value of heated casein does not seem to be due to destruction of amino-acids but to destruction of vitamins

54 **Action of Yeast Fractions on Growth**—The fractionation of yeast with phosphotungstic acid shows that the growth promoting substance is carried down with the precipitate and a large part of its activity is lost during the fractionation The instability of this substance when fractionated with silver salts presents greater difficulty than that experienced during the fractionation of the beriberi vitamin The authors suggest that both these problems can only be solved when more adequate methods are available

59 **Vitamin in Sheep Pancreas**—The results of Eddy's rat experiments seem to prove conclusively that the water soluble portion of the alcoholic extract of pancreas contains a substance that is capable of inducing marked increase in growth This substance is removed from the extract without loss of power by treatment with Lloyd's reagent It is also precipitated in the phosphotungstic precipitate of the extract It is not a protein or fatty substance

60 **Possible Interrelations Between Acidosis and Creatin Elimination**—The facts enumerated by Underhill confirm the findings of McCollum and Steenbock that creatin may appear in the urine even when adequate carbohydrate is supplied, and they lead the author to the conclusion that creatinuria is not necessarily related to carbohydrate deficiency in the body It would appear to be associated with a condition of acidosis which may and usually does accompany those states of metabolism in which carbohydrate deficiency is especially noticeable.

61 **Influence of Alkali on Creatin Elimination During Inanition**—Underhill found that administration of alkali during the earlier days of starvation may greatly diminish or completely abolish the creatinuria of that condition Later in the period of inanition introduction of alkali may not show as marked an influence on the existing creatinuria The results of these experiments lend support to the hypothesis that there exists a relationship between acidosis and creatin elimination

63 **Relationship of Creatinuria to Carbohydrate Metabolism and Acidosis**—The results presented by Underhill and Baumann make it evident that creatin elimination in the urine may be induced by at least two different sets of conditions (1) creatin may appear in the urine in states of acidosis in cases in which carbohydrate deficiency is not involved, and (2) creatinuria may be present during carbohydrate deficiency even in the absence of acidosis

66 **Value of Vitamins in Human Nutrition**—As a result of nutrition experiments with yeast it is shown that the value of yeast as a protein source is not very great A large quantity of unutilized yeast passes in the feces and is lost Yeast, on account of its high purin content, causes a distinct rise of uric acid in the blood, and for this reason cannot be used to the exclusion of all other food Experiments with vitamin free food, in the form of white rice and white bread, confirm the results of Abderhalden, Fodor and Rose, who found that to obtain a positive nitrogen balance, more white bread is required than whole bread or potatoes Whether this low value of vitamin free food is due solely to the absence of vitamin, the authors were not able to prove as their experiments were of comparatively short duration

68 **Determination of Acetone in Urine**—A colorimetric method for the quantitative determination of acetone in urine is presented by Csonka, based on the red color of the alkaline salt of dioxydibenzene acetone, which was first used by Frommer as a qualitative test for acetone The method is also recommended for clinical use on account of its simplicity, accuracy and rapidity of estimation

73 **Influence of Bile on Autolysis**—Tatum found that bile is a powerful cytolytic agent This cytolysis is produced by virtue of the co enzyme or activating action of the constituents of bile on the autolytic enzymes or processes Whole bile is more powerful though less penetrating than corresponding concentrations of either of the bile salts The maximum effects of bile or bile salts are many times greater than the effects of the optimum concentration of acids Sodium glycocholate appears to affect cytoplasmic material more than does sodium taurocholate, though both affect nuclear material about equally

74 **Rate of Urea Excretion**—In thirty-nine experiments on young healthy adults Addis and Watanabe found that no evidence of variability in kidney action could be obtained in the work of excreting preformed urea added to a constant diet It is concluded therefore that the normal kidney under constant conditions is characterized by the possession of a high degree of constancy of function

Journal of Cutaneous Diseases, Boston

October XXXIV No 10

77 *Syphilis of Nervous System J A Fordyce New York—p 713
78 Case of Atrophy of Fatty Layer of Skin, Preceded by Ingestion of Fat by Large Phagocytic Cells—Macrophages T C Gilchrist and L W Ketron Baltimore—p 728
79 *Exudative Diathesis and Study of Acetone Bodies in Blood of Nine Cases M F Engman and R S Weiss St Louis—p 739 To be continued
80 Lichen Planus Accompanied by Bleb Formation D W Montgomery San Francisco—p 748
81 *Differential Blood Counts in Parasitic Skin Diseases and Their Possible Significance A Strickler Philadelphia—p 752

77 **Syphilis of Nervous System**—All patients at the end of the first year of their infection, Fordyce says, should be punctured whether or not they have manifestations or positive signs of the disease If the fluid remains negative to all of the tests they can be assured with a reasonable amount of certainty that they are not menaced by the possibility of a later development Furthermore, a positive colloidal gold test with a persistent positive Wassermann in the high dilutions, points to an impending paresis whether or not the patient shows mental impairment In other words, years before the stigmata of degeneration appear, the pathologic process is at work in the central nervous system Wh

the clinical symptoms of paresis develop, like memory, speech hand-writing defects, etc, the disease has already existed for years This statement also applies to tabes The results obtained in the treatment of tabes would seem to confirm the hypothesis that this affection is primarily an inflammatory process involving the meninges, rather than a degenerative process, for if the latter assumption were correct benefit from the treatment could not be derived

79 **Acetone Bodies in Blood** —Engman and Weiss claim that the exudative diathesis should be recognized as a clinical entity It is hereditary and congenital and whole families may show evidences of it The main symptoms are respiratory and dermal (parts exposed to trauma) Eosinophilia is very frequently found The treatment is essentially protective and dietetic

81 **Differential Blood Counts in Parasitic Skin Diseases** — According to Strickler there is an increase in the blood of the small lymphocytes in ringworm of the scalp The average count for sixty cases was 37 4 per cent of lymphocytes In the small lymphocytes 20 per cent did not show any increase There is a slightly greater increase in the small lymphocytes in those patients treated by vaccines, than in those patients receiving local treatment only This difference is, however, small Pediculosis of the body, unlike scabies and grain itch, does not show any change in the blood picture from that seen in the average normal patient In the four cases of favus studied, there seemed to be an increase of small lymphocytes, but the cases are too few to permit of any conclusions

Kansas Medical Society Journal, Topeka

October XVI No 10

82 Newer Anesthetics in Labor G C Mosher Kansas City, Mo —p 281
83 Stricture of Esophagus Report of Case W A Wehe, Topeka —p 289
84 Case of Tinea Barbae Clinically Suggestive of Actinomycosis R L Sutton Kansas City Mo —p 291
85 Safe Way to Remove Tonsils of Small Children T L Higginbotham Hutchison —p 295

Maine Medical Association Journal, Portland

October VII No 3

86 Digitalis Therapy F S Meara New York —p 69

Medical Record, New York

October 14 XC No 16

87 Tuberculosis Survey of Alaska Eskimo Village — Using Children Under Fifteen Years of Age as an Index H C Michie U S Army —p 663
88 Present Status of Chronic Multiple Arthritis with Special Consideration of Infection as Etiologic Factor G R Elliott, New York —p 666
89 Ragweed Pollen in Nasal Secretion of Hay Fever Cases W Scheppegrell New Orleans —p 672
90 Significance of Increased Duodenal Dilatability W H Barber New York —p 673
91 Intermaxillary Splint G M Dorrance Philadelphia —p 674
92 Apparatus for Direct and Continuous Transfusion of Blood A Kahn New York —p 675
93 Recurrent Acrodermatosis of Warm Countries R Ruiz Arnau San Juan Porto Rico —p 677
94 Treatment of Wounds L Sexton New Orleans —p 680

October 21 No 17

95 Management of Poliomyelitis with View to Minimizing Ultimate Disability R W Lovett Boston —p 705
96 Roentgen Diagnosis of Tuberculosis of Lungs. H Hulst Grand Rapids Mich —p *712*
97 Medical Mind J M Putnam Buffalo —p 718
98 Treatment of Flat Foot in Old Patients S Epstein New York —p 720
99 *Cardiac Crises in Tabes Dorsalis Report of Case with Sudden Death M F Lautman Hot Springs Ark.—p 722
100 Late Infection Following Corneoscleral Trephine Operation for Glaucoma C B Broder New York —p 723

99 **Cardiac Crises in Tabes Dorsalis** —In a man with advanced taboparesis there occurred attacks of pain about the heart, in the nature of cardiac crises There were no postmortem evidences to explain the sudden death which occurred in one of the paroxysms which renders quite plausible the assumption that death was due to a cardiac crisis The valves, as well as the coronary arteries throughout their entire extent showed no abnormalities The aorta with the exception of three small atheromatous calcified plaques on the posterior wall, just above the ring, was negative In addition the capsule of the liver showed a few cicatrices, there was a Meckel's diverticulum, and there were only two lobes in the right as well as the left lung

Nebraska State Medical Journal, Omaha

September I No 3

101 Surgical Pathology and Operative Technic of Duodenal and Gastric Ulcer J S Welch Lincoln —p 67
102 Etiology and Pathology of Gastric and Duodenal Ulcers. A C Stokes Omaha —p 72
103 *Possible Predisposing Factor in Etiology of Duodenal Ulcer C A Roeder Omaha —p 76
104 Diagnosis of Gastric and Duodenal Ulcer A D Dunn Omaha —p 78
105 Treatment of Gastric Ulcer L Crummer Omaha —p 81
106 Case of Adenocarcinoma of Lung G W Covey Lincoln —p 82
107 Operative Treatment of Cancer by Actual Cautery J E Summers Omaha —p 86
108 Remote Effects Following Oral Infections L M Stearns Kearney —p 90
109 Smallpox Ulcer of Cornea J L Sutherland Grand Island —p 92

103 **Etiology of Duodenal Ulcer** —Traction on the bulb or first portion of the duodenum when the dilated segment or stomach is filled, Roeder says, may have some bearing in the etiology of duodenal ulcer The first portion of the duodenum or bulb suspends more weight after meals than any other portion of the gastro-intestinal tract at any time, with the possible exception of the area surrounding the cardiac orifice There is constant traction on this first portion of the duodenum for one or two hours after eating, particularly so in those who cannot afford the luxury of the reclining posture for at least one hour after a hearty meal During spring and fall the laboring man works hardest and eats most and going to work on a full stomach with considerable traction on the bulb, Roeder says, may account for the seasonal exacerbations so characteristic of this lesion

New York Medical Journal

October 14 CIV No 16

110 Postfebrile Treatment of Anterior Poliomyelitis. D D Ashley, New York —p 725
111 Epidemic Poliomyelitis W S Bryant New York —p 727
112 Intracranial Murmur of Long Duration and Spontaneous Cessation F K Hallock Cromwell Conn —p 729
113 Pelvic Inflammation H M Armitage Chester Pa —p 730
114 Chronic Renal Infarcts Nephrectomy Case Report N P Rathbun New York —p 734
115 Extra Uterine Gestation E P Lothrop Buffalo —p 735
116 Status Lymphaticus W L Culbert New York —p 739
117 Cystoscopic Rectovesical Transillumination P S Pelouze Philadelphia —p 740
118 Obstetric Abdominal Hysterotomy Report of Twelve Cases A M Hellman New York —p 741

Northwest Medicine, Seattle, Wash

October XV No 10

119 Physicians Defense and Defensible Physician W Kuykendall Eugene Ore —p 319
120 Questions of Interest to the Profession E W Whitney Salt Lake City —p 323
121 Case of Primary Syphilis of Eye W G Cameron Tacoma —p 328
122 Window Resection of Larynx for Removal of Intrinsic Malignant Disease F Adams Seattle —p 330
123 Mastoiditis Complicated with Brain Abscess Operation and Recovery Report of Case P B Wing Tacoma —p *332*
124 Thyroglossal Tumor (Aberrant Thyroid) Report of Case W K Seelye Seattle —p 334
125 Plea for Earlier Operation of Strabismus or Squint E B Burwell Seattle.—p 335
126 Ultimate Nervous Results of Acute Angulation and Flexure of Sigmoid and Consequent Fecal Stasis Eczema Madidans Report of Eight Cases W H Axtell Bellingham —p *337*

Philippine Journal of Science, Manila

March XI No 2

127 Bacteriologic Examinations of Swimming Pools in Manila C E Gabel Manila —p 63
128 *Wassermann Reaction with Glycerinated Human Serum E H Ruediger Manila —p 87

128 **Wassermann Reaction with Glycerinated Human Serum** —This, Ruediger's second report, deals with serums tested monthly for a period of three months The serums had not become anticomplementary There was practically no

difference between the first and second readings All serums remained clear and free from bacterial growth A few cubic centimeters of each of these serums remain and Ruediger expects to report on them at intervals of a year

Vermont Medicine, Rutland

August I No 8

129 Some Fundamental Causes of Disease W S Bainbridge New York.—p 217
130 Rectal Anesthesia and Demonstration of Gwathmey s Method W M Johnson, New York —p 224

FOREIGN

Titles marked with an asterisk (*) are abstracted below Single case reports and trials of new drugs are usually omitted

Indian Medical Gazette, Calcutta

September LI No 9

1 Reflections on Cataract Extraction E A R Newman —p 321
2 Eye Strain M Corry and H Shanker —p 324
3 *Value of Quinoidin in Malaria E E Waters —p 335
4 Cholera Inoculation Carried Out on Northwest Frontier 1915 M A Nicholson —p 338
5 Double Inguinal Hernia N K Basu —p 340
6 Epigastric Hernia in Sepoys N W Mackworth —p 340

3 Value of Quinoidin in Malaria—It appears that in India quinoidin is being used in large quantities in the treatment of malaria It is not only effective but it is cheap Waters says that it is a splendid prophylactic In August, 1914 a spleen census was taken of the boys attending four higher and middle English schools Of 402 boys, 136 were found to have palpable spleens of various sizes Quinoidin tablets were issued freely and administered regularly by the school head master from August to January When the same boys were examined again in February, 1915, enlarged spleens were found in twenty-eight only—a drop from 33 to 7 per cent A similar examination was made of some 700 children in 1915, and the spleen index fell from 14 4 to 8 per cent

For ordinary acute malaria and outpatient work 12 to 16 grains daily are generally sufficient, says Waters More may safely be given, especially in chronic and spleen cases, less is often effectual It is important that a preliminary purge be administered With inpatients the first day is usually occupied by necessary blood and urine examinations, the purgative and so on, giving a simple diaphoretic, if necessary On the second and subsequent days two 2-grain tablets of quinoidin are given twice daily and this is sufficient in the vast number of cases to bring the temperature down to normal or nearly normal by the third or fourth day—say a total dosage of 36 to 48 grains In chronic cases with enlarged spleens or in malignant tertian infections Waters prefers to combine ammonium picrate half a grain, and arsenious acid 1/100 grain Beginning with 12 daily this can generally be increased up to 24 daily without intestinal or arsenical symptoms Quinoidin is slightly more lethal to guinea-pigs than quinin Properly administered, it is at least as effective as quinin, and causes no cinchonism or gastric trouble

Practitioner, London

October XCVII No 4

7 Alleged Incontinence of Urine and Malingering J Collie —p 301
8 Some Medicolegal Points in Connection with Death W A Brend —p 312
9 Surgical Judgment J H Watson —p 323
10 Recent Public Health Work J Priestley —p 336
11 Recent Work in Tropical Diseases R. T Hewlett —p 351
12 Renal Excreta An Examination of Some Fallacies and Facts E Wooton —p 363
13 *Continuous Counter Irritation as Therapeutic Measure in Rheumatoid Arthritis Etc. W J Midelton.—p 371
14 Valvular Disease of Heart in Army Recruits and Soldiers Proposed for Invaliding S Wyard —p 377
15 *Sublingual Medication W Paulson —p 389
16 Case of Egg Poisoning (Anaphylaxis) R S C Edleston —p 391

13 Continuous Counter Irritation in Rheumatoid Arthritis—Not only are changes in the spinal cord beneficially influenced but Midelton says the whole system improves when continuous counter irritation is properly carried out for a sufficient period in rheumatoid arthritis Among other improvements he has noted the following in a sufficiently large number of cases to be beyond any possible question of their being mere coincidence Pain and swelling have gone from joints, and movement has greatly increased Wasted and contracted muscles have thickened, elongated and become more powerful Pads and fringes in the interior of joints have so diminished as no longer to cause pain or limitation of movement Fibrous and semifibrous thickenings of all kinds, such as adhesions, nodules and lipomas have disappeared, in some cases the nodules have been as hard to the touch as wood Deformities of arms, legs, toes and fingers have greatly lessened Eruptions of many kinds on the skin, as well as discolorations have cleared up "Wooden facial features have become normal Sleep, appetite, digestion and action of the bowels have greatly improved, and so have sight hearing, taste and smell The mental capacity, too, greatly increases and morbid thoughts of all kinds either diminish or go completely

Skilfully and carefully carried out, the treatment is without serious risk, and sepsis plays no part in it. The three methods employed by Midelton are (1) the blister, followed by savin ointment, (2) multiple superficial acupuncture (thousands of punctures are made at each sitting), followed by irritants Midelton paints over the punctured area a mixture of croton oil, cantharides and almond oil The mixture is carefully proportioned in order to produce an eruption only and no blisters, (3) the galvanocautery This is chiefly applied to the back near the spine Small dots or dashes are made the number being arbitrary and given according to the needs of each patient.

15 Sublingual Medication—For the absorption of concentrated remedies (unchanged and uncontaminated) directly into the circulation, Paulson regards the sublingual space as the most reliable surface in the whole body The only preparation necessary is rinsing with water if the mouth is dry For the relief of severe pains such as those of renal or biliary calculi and on many other occasions, both in military and ordinary practice, the method is said to be of incalculable service

Bulletin de l'Académie de Médecine, Paris

September 19 LXXVI No 37 pp 203 210

17 *Injury of the Ear from Explosions Nearby (Les mutilations de l organe auditif par les detonations leurs veritables causes moyens pratiques de les eviter) Wicart —p 204
18 Typhus in Serbia in 1914 and 1915 (Considerations epidemiologiques et cliniques sur l epidemie de typhus exanthematique au cours de la guerre actuelle en Serbia) Petrovitch —p 206

17 Injury of the Ear from Explosion—Wicart insists that the air concussion from an explosion induces as a rule merely transient and curable disturbances in a previously normal ear Chronic ear trouble or old healed otitis materially aggravates the effects of the air concussion In many cases the disturbances from the concussion are prolonged or aggravated by some constitutional trouble syphilis, malaria, autointoxication, etc Treatment of the constitutional trouble relieves and may cure the ear disturbances associated with local measures to soothe the swollen mucosa in the nose pharynx and eustachian tubes and soften and mobilize the tympanic membrane He advises to fill the ear with cotton wet with glycerin to prevent contusion of the tympanic membrane, and to wear ear muffs padded with cotton Swallowing two or three times, with the nostrils pinched together with the fingers helps to hold the tubes open at the moment of the explosion Infection comes by way of the tubes or outer ear and hence he urges systematic hygiene and sterilization of the ear and nasopharynx to keep the ears in good condition in prophylaxis See also Paris Letter in The Journal, p 1314

Lyon Médical

September CXXV No 9 pp 369 416

19 *Juxtacardiac Gastric Ulcer Four Cases Guerin —p 369
20 Diabetes in Old Syphilitic Cured Apparently by Mercurial Treatment Revillet —p 374

19 Ulcer of the Stomach Near the Cardia—In Guerin's four cases the ulcer was on the upper part of the lesser curvature involving the posterior rather than the anterior wall of the stomach In three cases its removal was not attempted, but in the fourth case the region was easily excised notwithstanding adhesions to the pancreas The abdominal portion of the esophagus seems to be longer in women than in men, so that juxtacardial ulcers are more accessible As adhesions are liable to prevent radical measures, it is important to act promptly, but the diagnosis is not an easy matter in these cases The patient feels merely vague pains between the shoulders at first, and a little pain on swallowing certain kinds of solid or fluid foods Gradually these symptoms become more pronounced The interscapular pain becomes continuous, and the patient, to spare himself this discomfort, eats less and less, until the emaciation is extreme Pain in the epigastrium is rare Only one of the four had cramps in the stomach an hour after eating It subsided after regurgitation There is no vomiting of the esophageal type but there may be occasionally vomiting of the pyloric type There is constipation and the stools are blackish, with occult blood The ulcer is hidden behind the costal arch, and radioscopy proved constantly negative in his cases

Le Nourrisson, Paris

IV No 5 pp 257 320

21 Partitioned Off Meningitis (Formes cloisonnees et ventriculaires de la meningite cerebro spinale Ependymite meningococcique evoluant en cavite close) A B Marfan—p 257
22 Chemical Study of Woman s Milk and Clinical Deductions (Lait de femme) R Raimondi—p 269
23 Infantile Tuberculosis and Intradermal Tuberculin Treatments L Jeanneret—p 283
24 Tetany in Infant nearly Two with Inherited Syphilis the Para thyroids Apparently Normal (Spasme de la glotte et convulsions generalisees avec du facial chez un enfant atteint de rachitisme syphilitique Integrite microscopique des glandes parathyroides) A B Marfan—p 291
25 Acute Lobar Pneumonia in Eighteen Months Infant Simulating Meningitis Lavergne—p 295

Paris Médical

September 23 VI No 39 pp 257 272

26 *Agar in Antiseptic Dressing of Wounds (Le pansement antiseptique a l agar agar) M Loeper and P Barbarin—p 257
27 *Radiotherapy of Peripheral Tuberculous Glands E Albert Weil—p 260
28 Bone Graft Surgery (Une methode nouvelle de greffe osseuse dans la pseudarthrose Methode d'Albee de New York) J Calve and M Galland—p 264
29 Military Status of Tuberculous Soldiers (Des tuberculeux et de leur situation militaire) A Lanzenberg—p 268

26 **Agar for Dressing Wounds**—Loeper and Barbarin expatiate on the advantages of pads of agar, or agar tied in the center of a square of gauze, to apply to wounds It is exceptionally compressible and elastic while it absorbs eight times its weight of water, and dries extremely slowly Its absorbing power is so great that microbes and leukocytes accumulate in it when used as a dressing It spreads the walls of the wound apart and with the projecting ends of the square of gauze serves as a perfect drain They have found this very useful to supplement the Carrel-Dakin method of treatment, running the tube down into the sachet, as they call the sugar teat arrangement of agar and gauze. Agar is not a culture medium for germs

27 **Roentgen Treatment of Tuberculous Glands**—Weil declares that there are no tuberculous adenopathies which are not suitable for Roentgen-ray treatment In his experience with fifty cases he has had no failures He uses large doses, but fractions them, and divides the skin over the region into as many areas as necessary to expose the whole of the gland, giving a total of from 10 to 14 H units at each portal of entry, filtering through 4 mm aluminum This usually takes five or six days He gives illustrations of a number of cases showing how the adenopathy retrogresses even when of months' standing He clears out the fistula and suppurating focus first, but the merely inflamed glands, without suppuration, do not require this

Presse Médicale, Paris

September 21 XXIV No 52 pp 413 420

30 *The Agglutination Test in Typhoid and Paratyphoid in the Vaccinated and the Nonvaccinated (L epreuve de la saturation des agglutinines) C Gautier and R J Weissenbach—p 413
31 *Trephining the Lateral Ventricle in Protracted Form of Meningitis. Neveu Lemaire, Debeyre and Rouviere—p 415

September 25 No 53 pp 421-428

32 *Skull Wounds (Quelques notes au sujet des plaies penétrantes du crane en chirurgie de guerre) J Abadie—p 421
33 *Lid Reflex as Test for Deafness (Note sur l utilisation du reflexe cochleo orbiculaire pour la surdite) F Gault—p 424

30 **Agglutination in Typhoid and Paratyphoid**—This article is based on the findings in 226 cases in which the agglutination test was supplemented by testing for saturation of the agglutinins To avoid error, it is necessary to compare the agglutinating limit for all three bacteria, the typhoid and the paratyphoid A and B The laboratory findings must be interpreted by the light of the history of the case, stage of the disease and previous vaccination A single negative response is not decisive Anomalous findings are explained by mixed infections but even then the serodiagnosis is useful, showing the necessity for supplementary investigation

31 **Trephining Lateral Ventricle in Meningitis**—The case reported shows the necessity for relieving the walled-off focus in the ventricle when, after the patient seems to be well on the way to recovery severe symptoms return with others showing pressure on the brain The technic for puncture of the lateral ventricle is described in detail, the operation is said to be rapid, easy and seemingly free from danger Hesitation and abstention are relics of the old exaggerated dread of touching the brain The earlier the relief is given the better the results The apparently doomed child was rescued by the trephinopuncture in the frontal portion of the right lateral ventricle This avoids the superior longitudinal sinus and the anterior branch of the middle meningeal artery The needle was held slanting downward, inward and backward It was introduced for about 4 cm and after 35 c c of fluid had escaped, about 15 c c of antimeningococcus serum were injected

32 **Skull Wounds**—In reviewing his experiences in 127 skull wounds, Abadie mentions that only three of the men required a subsequent operation His method of early trephining and puncture gives durable results The number of men with skull wounds reaching the hospital is much larger this year than last This fact is regarded as testifying to the protection afforded by the metal helmet Without this more men would have been killed outright He operates without assistance, except the aid of an automatic retractor, and punctures even the intact dura mater if it is stretched or unduly depressible Seventeen illustrations accompany the article

33 **Instructive Reflex in Testing Deafness**—Gault's experience has convinced him of the functional nature of the trouble in many men apparently irretrievably deafened by a nearby shell explosion In sifting out these cases he has been impressed with the diagnostic value of excitation of the facial nerve and, especially, of the orbicular muscle of the eyelids A bicycle horn is blown suddenly 6 feet from the ear while the eyelids are being watched under a magnifying glass The sudden impression on the auditory nerve elicits a reflex contraction of the orbicularis palpebrarum, impossible to mistake This cochlea-eyelid reflex thus denotes that the deafness is psychic in nature and hence curable if treated in time and in the proper environment

Correspondenz-Blatt fur Schweizer Aerzte, Basel

September 16 XLVI No 38 pp 1185 1216

34 War Injuries of the Visual Apparatus (Kriegsschadigungen der Sehorgane) P Knapp—p 1185
35 The Question of Specialists from the Standpoint of Sickness Insurance (Zur Spezialistenfrage Beitrag zur Praxis des schweizerischen Krankenversicherungsgesetzes) A Nordmann—p 1201

September 23 No 39 pp 1217 1248

36 *Autolysate Treatment of Cancer (Ueber einige Ergebnisse aus dem Gebiete der Krebsforschung mit bes Berucksichtigung der Autolysattherapie) R Klinger—p 1217
37 The Campaign against Quackery in Switzerland (Der Kampf gegen das Kurpfuschertum in der Schweiz) H Hunziker—p 1230 Translated for Miscellany

36 **Autolysates in Treatment of Cancer**—Klinger remarks that the questions of a predisposition to cancer and immunity

have been illuminated to some extent by recent research, especially on mouse tumors A tendency to be susceptible or to be refractory may be inherited, and experimental cancer research to a large extent is now study of immunity problems The effort to induce immunity has led to treatment with autolysates, although the phenomena of and bases for the latter differ in many points from immunity processes The results of Klinger's own research and experience confirm the possibility of influencing the growth of a tumor by injecting certain products of the breaking down of albumin These autolysates supply the body with ready-made ferments while at the same time exerting a stimulating action on the blood-producing tissues, whipping them up to increased production of the tumor cell-destroying substances As cancers consist essentially of albuminoid substances, it seems evident that their retrogression and absorption depend on the intensification of certain disintegration processes No means is known of isolating the different albumin building stones from a mixture of them, but Herzfeld's method of quantitative determination of the bodies reacting to ninhydrin enables us to determine the intensity of the disintegrating power of such a mixture, and to compare different ones with each other This method provides an objective measure of the "wrecking' efficiency of autolysates used for therapeutic purposes Autolysates from the various organs of the same animal may have widely differing disintegrating power as is shown by an experiment related

The process is a chemical one, and the therapeutic results that have been attained with autolysates are encouraging although not brilliant Quite a number of cases have been reported of complete cures or essential improvement under autolysate treatment of previously inoperable cancers In Bertrand s case an extensive recurrence of a mammary cancer was completely cured On suspension of the treatment after several months of the daily injections, the tumor began to grow again The resumption of growth on suspension of the treatment apparently shows that the cure was not a spontaneous subsidence of the tumor but was actually the work of the treatment Such brilliant results are exceptional, but even in the only improved cases the inflammatory infiltration may subside and the tumor may cast off necrotic masses, the edges of the ulceration healing over Cancers bleeding and suppurating profusely may have the bleeding and secretion arrested The tumor often grows so much smaller that the esophagus or rectum may become permeable once more Pains caused by the infiltration subside as this retrogresses In many cases the growth becomes operable after a few weeks of autolysate treatment

The failures are due to some extent to the use of ineffective extracts They should have their proteolytic power tested both quantitatively and qualitatively in vitro, and efforts should be made to discover substances which have the strongest proteolytic action on tumor albumin The action on the tumor is not dependent on any general reaction, and hence solutions should be selected which elicit the fewest by-effects Klinger regards intravenous injection as the most effectual route There does not seem to be any danger of anaphylaxis, he says, but sometimes the autolysates seem to lose their power in time This can be avoided by changing the material Klinger gives no details of personal clinical experience with the method, but regards it as justifying further trials, associating with it a diet tending to augment the destruction of albumin restriction to milk and vegetables, copious drinking of diuretic teas sweat cures, etc Teilhaber seeks to stimulate and modify the metabolism by sports, massage, change of air, vegetarian diet, etc, with venesection once a year, withdrawing 400 or 500 c c of blood He has had cases in which an inoperable cancer spontaneously retrogressed after an operation accompanied by much loss of blood Klinger adds that the lesser activity of the metabolism in the elderly is due not so much to reduced assimilation as to sluggish processes throughout They work less actively and the body is not flushed so thoroughly with its fluids, but more important than all this is the less active functioning of the glands which regulate the metabolism of albumin (thymus, thyroid and sexual glands)

Gazzetta degli Ospedali e delle Cliniche, Milan

September 21 XXXVII No 76 pp 1185 1200

38 Radioscopy of the Liver and Biliary Passages (Esame radiologico del fegato e delle vie biliari) M Pavesi —p 1187

September 24 No 77 pp 1201 1216

39 Value of the Electrovibrator in Search for Foreign Bodies (L elettro vibratore del Bergonie nella ricerca dei proiettili magnetici) V Maragliano —p 1201
40 War Wounds of the Skull R Mosti —p 1210
41 The Red Cross and the Military Sanitary Service E Villa —p 1215

Policlinico, Rome

September 24 XXIII No 39 pp 1143 1166

42 *Iodoform Glycerin in Treatment of Tuberculous Pleurisy and Peritonitis (Il metodo Capparoni nella cura delle pleuriti e peritoniti tubercolari) C Antonucci —p 1150

42 **Iodoform-Glycerin in Treatment of Tuberculous Pleurisy and Peritonitis**—Antonucci has been applying local treatment with a 20 per cent suspension of iodoform in glycerin and reports satisfactory and even amazing results in some of the twelve cases of pleurisy and seven of peritonitis All have kept in good health since The iodoform and the glycerin are sterilized separately, he used from 2 to 4 gm of the iodoform in 10 to 20 gm of glycerin restricting the patients to milk at the time He does not aspirate any effusion that may be present unless compelled by circumstances, and he made only one injection There was generally a febrile reaction and in some cases albuminuria One young woman with pains in the abdomen, fever and night sweats for about three months, with ascites, threw off all symptoms after the injection of 4 gm of iodoform in 20 gm glycerin The abdomen seems to be normal and three months afterward the patient was apparently in the best of health, general and local In one of the peritonitis cases, two injections were given The fluid was aspirated out in only one case as he does not wish to deprive the body of the antibodies it has been developing The reabsorption of the fluid acts as a form of autoserotherapy The outcome was most gratifying in two peritonitis cases given only 2 gm of iodoform As the patients recovered they were given a course of heliotherapy or radiotherapy, with tonics usually arsenic and iodin He never had any mishaps, but refrains from giving this treatment when heart or kidneys are below par

Riforma Medica, Naples

XXXII No 1 pp 1 28

43 The Pitch as Element in Stethoscopic Sounds (Dell rapporto di altezza fra suono inspiratorio ed espiratorio nel respiro vescicolare e nel respiro bronchale fisiologico e patologico) A Martiri —p 10

No 25 pp 669 696

44 *Bile Producing Influence of Methyl Salicylate (Influenza dell' etere metilsalicilico sulla biligenesi) G Leone —p 669
45 *Pathologic Import of Toe Reflex (Su di un reflesso particolare e pathologico dell alluce Il fenomeno della seconda falange) P Boveri —p 674
46 Hypochlorous Acid in Treatment of War Wounds (Asepsi ed antisepsi in chirurgia di guerra) N Giannettasio —p 676 Continued

44 **Influence of Methyl Salicylate on Production of Bile**—Leone's experimental work on a guinea-pig has apparently established that this drug has the power to increase materially the amounts of bile secreted and of its total solid residue The bile soon after ingestion or subcutaneous injection of the drug is more fluid, but the osmotic tension and electric conductibility are higher as the total dry residue and ash increase Six series of experiments at intervals of one or two months were made on the guinea-pig, kept all the time on a constant diet and showing no change in weight The bile output increased much more, proportionately, after a dose of 1 gm than after a quarter of this dose

45 **Toe Reflex**—Boveri relates that if the patient lies prone, on his stomach, with legs held straight up in the air, feet at right angles to the leg, thus outlining almost a Z, attempts to elicit the Achilles tendon reflex may fail and another reflex may be elicited in its place, the bending of the second phalanx of the big toe Study of the cases in which this toe reflex occurs shows that it does not occur in the normal or when the Achilles reflex can be elicited It seems to be restricted to cases of injury of the spinal cord, spinal

nerve roots or sciatic nerve The men presenting this reflex had been wounded in the spinal roots or sciatic nerve, mostly the latter The percussion must be applied directly to the Achilles tendon In cases with complete section of the sciatic nerve this reflex did not occur, and its appearance later was a sign of improvement It seems to accompany only a partially destructive process He suggests a theoretical explanation for this reflex, and describes some typical cases in which it occurred

Semana Medica, Buenos Aires

August 3 XXIII No 31 pp 107 128

47 Climate in Treatment of Tuberculosis in Argentina (Consideraciones sobre climatoterapia Argentina en la tuberculosis) P A Guerrero —p 107
48 Care of the Newborn of Mothers Still Minors (La proteccion y asistencia social del recien nacido, hijo de menores sujetas a la tutela del Ministerio Publico) U Fernandez —p 111
49 A Suit for Medical Fees (Demanda por honorarios medicos Laudo arbitral) P B Aquino —p 114

Siglo Medico, Madrid

September 16 LXIII No 3275 pp 593 608

50 Hemostatic Action of Emetin (Sobre la accion hemostatica de las sales solubles de emetina) F F Martinez —p 595

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

September 23 II No 13 pp 1085 1172

51 *Cause of Laxative Action of Whole White Mustard Seed (Verklaring van de laxeerende werking van witte mosterdzaad) E C van Leersum —p 1085
52 *Care of Crippled Children (Zorg voor gebrekkige kinderen) J van Assen —p 1095
53 *Tumors from Presence of Spiroptera in Rat Stomachs (Over wormgezwellen in de maag van de rat) W F Wassink —p 1108
54 *Diagnosis of Intestinal Parasites I Bak —p 1117
55 *Poisonings in the East Indies (Vergiftiging in Nederlandsch Indie) M D Horst —p 1122
56 **Case of Febris Uveo Parotidea ' H W Leeksma —p 1126*

51 **Mustard Seed as Laxative**—Van Leersum refers to whole white mustard seed which has long been currently used for a laxative in some countries He had been investigating its laxative action as a mucilaginous seed when he noted the odor of sulphuretted hydrogen in a vial containing the water in which mustard seed had been placed the day before The gas bubbles accumulating on the inside of the vial contained more or less sulphuretted hydrogen Mustard seed is mentioned as a popular laxative by W Cullen in the eighteenth century Its efficacy is probably due to this generation of sulphuretted hydrogen and also of carbon dioxid, which stimulate bowel functioning This explains also the cyanosis in the cases of poisoning from mustard seed So long as the gas is harmlessly eliminated by the lungs there is no disturbance

52 **Outlook for Crippled Children**—Van Assen discusses the condition treatment and outlook for the seventy-two crippled children in the asylum at Rotterdam In only nine was the deformity congenital, and in five the result of an accident The necessity is emphasized for operative and medicomechanical procedures, special arrangements for schooling and attendants trained in helping cripples Such a home for crippled children should be located outside of the city The paralyzed form the main contingent of such cases, and he describes the various orthopedic procedures which he has found most effectual for the different types of deformity Among the various cases related is one in which epileptic attacks were traced to irritation from the stump after amputation of the upper arm After excision of the enlarged ends of the severed nerves, the attacks were arrested

53 **Worm Tumors in the Rat Stomach**—Wassink has been conducting experimental research on the spiroptera tumors which Fibiger found in the stomach of certain rats, as he reported two years ago (summarized in The Journal, Oct 3, 1914 p 1244) Wassink obtained infected cockroaches from Fibiger and succeeded in reproducing the tumors in rats and also in mice He also found in native rats a parasite very similar to if not identical with that described by Fibiger as the *Spiroptera neoplastica* The roaches eat the rat droppings and the larvae of the worms get into their muscles The rats eat the roaches and thus become infested anew The Holland parasite, however, does not cause production of a large tumor, as does Fibiger s spiroptera from the West Indies The results of Wassink's research are a complete confirmation of Fibiger's statements, on a large material, over 1 000 Amsterdam rats and 625 taken from ships arriving from the East Indies or South America, besides numbers of roaches from the same localities

54 **Diagnosis of Intestinal Parasites**—Bak has been comparing the various methods in vogue for facilitating the discovery of helminth ova in the stools, including Bass' and McNeil's methods He tabulates the parallel findings with Telemann's and Yaoita's technics, applied to fresh feces and to feces preserved with a 5 per cent aqueous formaldehyd solution He says that the Telemann proved simpler and injured the ova less than Yaoita's, while the Bass method takes too much time and alters the ova too much He applied Telemann s original technic except that he sometimes poured off the ether and filled up with fresh and centrifuged a second time The various technics all much facilitated the search for ova and encysted parasites The ten persons examined had all been for a longer or shorter time in the tropics, but were all supposedly healthy Only one was found free from helminths and only one specimen of stools was examined in this case One specimen from another person had 145 lamblia cysts and three ankylostoma ova Bak remarks in conclusion that the improved and facilitated technic for determining the presence of helminths has revealed their unsuspected prevalence in so many persons that we are liable to be led into the error of incriminating them for every morbid condition for which we cannot readily discover any other cause

55 **Poisonings in the East Indies**—Horst was at one time physician to the Batavia Petroleum Company and he here relates that poisoning is comparatively frequent among the natives of the East Indies At nearly every death one hears from some one a hint of foul play One reason for this, he says, is that many persons have a guilty conscience, another is that the sapping of the vitality by the tropic environment is liable to bring on sudden death in both natives and Europeans He relates a few cases, including one in which the bursting of an unsuspected liver abscess into the lungs caused symptoms, speedily fatal, resembling those of acute poisoning

56 **Uveo-Parotid Fever**—Leeksma adds a fifth to the four cases of this affection on record in accessible literature Heerfordt called attention to it as a new morbid entity in 1909, swelling of the parotid glands with iridocyclitis, all with a protracted or chronic course for months In two of his cases there was facial paralysis also on one side There were no cases of epidemic parotitis in the environment at the time But in Horst's case there were three cases of mumps in the family developing about a month after the onset of the affection in his patient It is evident, therefore he says, that the "febris uveo-parotidea" is merely an atypical form of mumps That the eye may be affected by the disease is nothing new Schiess reported a case some time ago of iridocyclitis in actual mumps Horst calls attention to the fact that in his case the facial paralysis developed on one side after the tumefaction on that side had quite subsided and the other side was swelling The paralysis therefore could not be ascribed to pressure on the nerve

Finska Lakaresallskapets Handlingar, Helsingfors

LVIII No 8 pp 1169 1296

57 **Malignant Chorio Epithelioma (Till kannedomen om* det maligna korionepiteliomet) O Engstrom —p 1169
58 Structure of Connective Tissue I (Strukturforhållanden i s k myxomatos bindvaf) H Eklof —p 1203
59 *Tuberculosis in Sawmill Workers (En undersokning af tuberkulosens forekomst vid Travaruaktiebolaget Kemi s sågar) H Snellman —p 1242
60 Resection of Congenitally Excessively Large Tongue. (Om den kongenitala makroglossien) Y Meurman —p 1258

57 **Malignant Chorio-Epithelioma**—Engstrom has previously reported five cases of malignant chorio epithelioma of the uterus and he here gives the minute details of a sixth

case There were metastases in the pelvis liver and left lung and notwithstanding removal of the uterus and adnexa and part of the pelvic cellular tissue, the woman succumbed four months later There had been an interval of four years since her last, the fifth, pregnancy Engstrom queries whether it is possible for fetal cells to lie latent for four years in the uterus before developing chorio epithelioma He cites a number of cases from the literature which apparently confirm the possibility of a long latent period In McCann s case there was supposed to be an interval of nine years None of the cases reported, however, stands criticism, so that there is no evidence to date that ectodermal cells can lead a slumbering existence in the uterus or elsewhere in the maternal organism for months or years Some unsuspected pregnancy, terminating in abortion at such an early stage that it escapes notice, is probably responsible for it

59 **Tuberculosis Among Sawmill Workers**—A large sawmill concern in northern Finland commissioned Snellman to investigate conditions in regard to tuberculosis among the employees and their families He found pulmonary tuberculosis in 3 95 per cent of the 2,408 persons, and glandular tuberculosis in 2.28 per cent. This total included 1 135 women, and 8 05 per cent of them presented signs of tuberculosis The research demonstrated anew the danger from tuberculous older persons in the family Measles and whooping cough, especially when they occur in the same child seem to have a predisposing influence for tuberculosis No decisive influence from dental caries on the incidence of glandular tuberculosis could be detected

Hygiea, Stockholm

LXXVIII No 17 pp 1281 1392

61 The System and Results of Regular Medical Inspection of Prostitutes at Stockholm (Till frågan om den sanitara overvakningen av de prostituerade) U Mullern Aspegren —p 1281
62 *Multiple Aneurysms of the Pulmonary Artery with Other Vascular Anomalies in Young Woman G D Wilkens —p 1307
63 Congenital Ocular and Facial Paralysis (Ett fall av medfodda rorlighetsdefekter inom hjarnnervernas område) G Kahlmeter —p 1321

62 **Multiple Aneurysms in the Pulmonary Artery**—The young woman whose case is described was under observation for six years She presented a number of uncommon vascular anomalies Roentgen-ray shadows in the thorax were assumed to be tuberculous foci and necropsy proved that this was the fact for some of them, but others were found to be shadows from distended portions of arteries

Svenska Lakaresallskapets Handlingar, Stockholm

XLII No 3 pp 647 1480 E Muller Festskrift Last indexed May 27 1916 p 1752

64 *Torsion and Incarceration of Parovarian Tumor at Seventh Month of Pregnancy E Ahlstrom —p 647
65 *Mercury Stomatitis in Rabbits (Den experimentella kvicksilver stomatiten hos kaniner) J Almkvist —p 652
66 Successful Removal of Otogenous Abscess in Temporal Lobe with Aphasia N Arnoldson —p 667
67 Correlation Between Two Variables Determined by Two Superposed Numbered Papers (Om en ny metod att på grafisk vag borttaga korrelation mellan två variabler) G Backman —p 673
68 Physiology of Cell Fission (Om celldelningens fysiologi) E L Backman —p 684
69 Origin of Congenital Atresia of the Duodenum H Berglund —p 703
70 Evolution of the Infraseptal Nasal Gland in Rodents (Om gnagarnas glandula nasalis infraseptalis och dess utveckling) I Broman —p 717
71 Discoverer of Thrush Fungus (F T Berg och prioriteten till torsksvampens upptackt) C Flensburg —p 737
72 *Roentgen Ray Diagnosis of Bone and Joint Tuberculosis (Nagra ord om ben och ledgångstuberkulosens diagnostik) G Forssell —p 746
73 The Descent of the Testicles (Om konskortlarnas descensus hos manniskan) H Forssner —p 765
74 Teaching of Anatomy at the University of Lund (Theatrum anatomicum lundense) C M Furst —p 816
75 *Congenital Subluxation of the Hip Joint and Its Treatment. P Haglund —p 850
76 *Microscopic Analysis of the Thymus in Sixteen Cases of Mostly Sudden Death from Internal Causes (Till vidare belysning av thymusstrukturen vid s. k thymusdod) J A Hammar —p 867
77 *Fat Embolism and Diabetic Lipemia G Hedren —p 933
78 *Certain Trematodea Infections and Their Importance in the Etiology of Tumors F Henschen —p 947
79 Eye Disease in Fishes in Captivity, Probably Traumatic (Om en ogonåkomma hos hajar och rockor i fångenskap) S L Henschen —p 971
80 Development of the Turtle Lung (Om sköldpaddslungans utveckling) C Hesser —p 980
81 *The Question of Best Treatment of Tracheal Stenosis G Holmgren —p 1017
82 Development of Conception of Aphasia (Historiska notiser i afasilaran) E O Hultgren —p 1022
83 Medicolegal Study of Local Effects of Hanging (Ett rattsmedicinskt fall mord eller olyckshandelse, jamte några berakningar av snarors tryck på halsen vid olika former av hangning) G Hultkvist —p 1038
84 Murder or Accidental Throttling in Meshes of Hammock C Hultkvist.—p 1038
85 Inducing Pneumothorax as Aid in Study of Intrathoracal Tumors Three Cases H C Jacobæus E Lindhagen and E Key —p 1074
86 Amyloidosis Diagnosed During Life After Puncture of the Spleen A Josefson —p 1106
87 Proportionate Size of Different Parts of the Skeleton of Fetuses at Different Stages of Development (Om storleksforhållandena av vissa skelettdelar från manskliga foster i olika utveckling) A Key Aberg —p 1109
88 Eventration Through the Diaphragm A Lichtenstein —p 1116
89 Shape Assumed by Crystalline Lens During Accommodation (Till kannedom om linsytornas form vid akkommodation i det manskliga ogat) J W Nordenson —p 1126
90 Treatment of Stiff Wrist (Mobilisation av ankyloserade handleder genom resektion och transplantation av bursa præpatellaris) C Nyström —p 1139
91 *Toxic Action from Mercury in Treatment of Syphilis (Nagra anmarkningar rorande fragan om kvicksilverbehandling mot syfilis — darjamte ett bidrag till den medikamentella kvicksilverförgiftningens klinik) K Petren —p 1156
92 The Prehistoric Bones Found in Sussex 1913 (Om underkaken i Piltdown fyndet Eo anthropus) M Ramström —p 1223
93 The Neuroglia in the Lower Vertebrates G Retzius —p 1257
94 Embryonal Arrangement of the Intestines (Om det normala tarmlagets uppkomst) T Rietz —p 1273
95 African Arrow Poison (Om lulengo) C G Santesson —p 1281
96 White Bile. (Om sammansattningen av den s k. vita gallan) J Sjoqvist.—p 1293
97 Variations in Arteries in the Arm (Till kannedomen om variationerna av armartarerna hos manniskan) G Svensson and P Wetterdal —p 1300
98 Abdominal Syndromes from Disease of Spinal Roots (Om radikulara buksyndrom speciellt motoriska) G Soderbergh —p 1320
99 Generalized Myelosis with Tumors in the Skin J Tillgren —p 1337
100 Gastric and Duodenal Ulcer from Surgical Standpoint. (Om ulcus chronicum ventriculi et duodeni fran kirurgisk synpunkt) A Troell —p 1343

64 **Torsion of Parovarian Cyst**—Ahlstrom explains the torsion as the result of passage of hard lumps of feces in the rectum, twisting the cyst which had been pushed into the pouch of Douglas by the pregnant uterus

65 **Mercurial Stomatitis in Rabbits**—Besides the injury of the mucosa, the mercury and the hydrogen sulphid, infection is necessary before the necrotic stomatitis in rabbits resembles mercurial stomatitis in man

72 **Diagnosis of Bone and Joint Tuberculosis**—Forty-nine fine radiograms accompany this article, but Forssell emphasizes that negative Roentgen findings by no means exclude tuberculosis The chief advantage of Roentgen examination is in cases which are apparently tuberculous but in which some other origin is shown by the rays A number of instances of this are described and the special points for differentiation are analyzed as the roentgenograms are compared, especially those showing Kohler's and Schlatter s diseases dissecting osteochondritis chronic traumatic arthritis and syphilitic lesions Future progress in this line will be by minuter persevering study of the roentgenograms in connection with the pathologic anatomic findings and by taking the pictures from more standpoints Many of the supposed 'failures' in Roentgen examination come from our inability to see and to interpret correctly what we do see

75 **Congenital Subluxation of the Hip Joint**—Haglund shows by a number of roentgenograms that congenital subluxation of the hip joint is by no means such a well defined deformity as might be supposed from textbook descriptions He insists that whenever anything is abnormal in the hip joint it should be given systematic reposition treatment in childhood Otherwise the mildest form of congenital subluxation may develop into something serious and handicap the patient throughout life He shows the numerous transi-

tional types between luxation and subluxation and between the latter and normal conditions

76 **Thymus Not Responsible for Sudden Death**—This is Hammar s conclusion from the research reported It confirms in every respect his former statements on the subject He published two years ago an account of the findings in the thymus in fourteen cases of sudden death from internal causes The list included one adult, the others were children from 9 days to 6 years old He has also a report in press on the thymus in twenty-five cases of exophthalmic goiter The present article gives the microscopic findings and other minute data of the thymus from sixteen children from 3 weeks to 15 months old, his tables and other data filling forty pages The findings are analyzed and compared with similar data from an equal number of apparently healthy children of about the same ages killed in accidents or dying from other external cause The thymus in the cases of sudden death from internal causes differed in no respect from the thymus in the healthy children Not even in the two cases of typical 'thymus death" could anything be found to incriminate the thymus It compared favorably in every respect with the thymus from the accident cases

77 **Fat Embolism with Diabetic Lipemia**—Hedren relates that at necropsy of sixty diabetics he found a slight degree of lipemia common, but in three it was very pronounced Only one of these presented evidences of fat embolism He reviews the literature on the subject and describes his case in detail The cadavers with considerable lipemia were those of a boy of 16 and a woman of 24 The kidneys were much degenerated and the pancreas atrophied It weighed only 29 gm in the lad (normal 78 gm), and 31 gm in the woman (normal 88 gm) The third case was that of a man of 25 who had had diabetes for two years He died after a few hours of restlessness and other symptoms suggesting fat embolism in the lungs but there was no coma Particles of fat were found in the lungs and also in other organs The possibility of fat embolism with diabetic lipemia is now proved

78 **Distomum Infection in Connection with Tumors**—Henschen infected five dogs and three cats with *Opisthorchis felineus*—more generally known as *Distomum felineum* His research was a continuation of Askanazy's work in this line and was done in his laboratory Various changes were noted in the walls of the biliary passages and pancreatic duct but nothing to suggest a malignant tumor

81 **Stenosis of the Trachea**—Holmgren calls attention to a case in which he dilated the passage by means of a roll of iodoform gauze The patient was a child who had had diphtheria three years before, and the larynx had become obstructed with a horizontal membrane just below the vocal cords He had worn a tracheal cannula for some time The membrane was excised through an incision from the tracheal fistula to the cricoid cartilage Holmgren had intended dilating the stenosis by the Schmiegelow technic but found that the larynx had atrophied to such an extent that it was impossible to introduce a rubber tube He had to content himself with introducing a roll of gauze, the silk threads holding it emerging through the tracheal cannula and through the mouth The threads rendered it easy to replace the roll with a larger one at regular intervals The roll was about 1 5 cm long and was changed every two or three days at first and later once a week The stenosis was thus gradually enlarged until finally a T tube could be introduced, the two arms fitting up and down in the trachea and larynx with the long end projecting through the tracheotomy opening The larynx gradually recovered its tone and normal size and aspect The vocal cords were stretched too far apart so he later excised some cicatricial tissue through a laryngofissure, mpeding their action and conditions are still approximately normal, over two years later

91 **Toxic Action of Mercury in Certain Cases**—Too large doses in too short a time were evidently responsible for the severe nephritis in three cases reported by Petren The toxic nature of the kidney trouble was evidenced by the contrast between the normal output of urine and small amount of sediment and the from [illegible] to 13 per thousand albumin In both cases the blood pressure was within normal range and the general health but slightly if at all impaired The nephritis was finally thrown off after about a year He compares with these cases the clinical symptoms and findings in a case of suicide with mercury In another case a previously healthy man of 27 was given mercurial treatment once a week for five or six months for recent syphilis, with only two pauses for two weeks Toward the last, large ulcerating syphilids developed on chest and arms, rebellious to further treatment, until a change was made to salvarsan and potassium iodid when they subsided in a few weeks Petren further gives the details of three fatal cases of therapeutic mercurial poisoning The form of mercury used was not known in one of the cases The symptoms were mainly mercurial tremor, cachexia, mild nephritis and polyneuritis Cachexia with stomatitis was responsible for the two other deaths Petren cites further from Swedish literature three cases of fatal colitis following injections of "mercuriol" He expatiates further on the occasional difficulty in distinguishing between symptoms of the syphilis and those for which the mercury is responsible He is convinced that the polyneuritis was the work of the mercury The clinical history of six other cases is given in addition to illustrate the difficulties in estimating and treating syphilis causing symptoms on the part of the heart When there are other signs of syphilis or a positive Wassermann in a patient with symptoms suggesting sclerosis of the coronaries or myocarditis, antisyphilitic treatment should certainly be given a trial

Ugeskrift for Læger, Copenhagen

September 14 LXXVIII No 37 pp 1571 1608

101 *Ameba Dysentery and Liver Abscess in Denmark (Et Tilfælde af Amøbe Dysenteri) L. Melchior—p 1571
102 *Recurrence of Syphilis Two and Three Years After Abortive Treatment Two Cases (To Tilfælde af Recidiv af Syfilis 2¼ og 3 Aar efter Forsøg paa abortive Kur ved Indurationer med negativ Wassermann Reaktion) H Boas—p 1579

101 **Ameba Dysentery in Denmark**—The necropsy in the case of subacute hemorrhagic enteritis reported revealed ameba dysentery and a solitary abscess in the liver The necropsy records at Copenhagen for the last nine years list twenty-three cases of blood-borne liver abscess and eleven from gallstone or cancer trouble The proportion was 1 245 necropsies, but there was a single abscess in only three of the cases, and in no instance was ameba dysentery responsible Melchior gives illustrations of the microscopic findings in his case The patient was a sailor just returned from South America, and he succumbed in three months after the first symptoms

102 **Recurrence of Syphilis Two or Three Years After Thorough Abortive Treatment**—Boas regards the two cases he reports as extremely instructive The thorough course of one intramuscular and one intravenous injection of salvarsan (0 6 and 0 4 gm) and fifty inunctions with mercury was commenced at the first sign of trouble—a hard ulcer in the genitals with swelling of glands in the groin on one side The young men returned for inspection and the Wassermann test once a month during the first year thereafter and on alternate months during the following year There were no symptoms of the syphilis after the first, and the Wassermann test was constantly negative throughout After a period of two years and three months in one case and of three years in the second, one young man developed extensive ulcerating papules on the tonsils with syphilids on the trunk and genitals, and the other developed large ulcerating papules on the scalp with spirochetes in the secretion At this recrudescence of the syphilis there was a faint Wassermann reaction in both

Reinfection, after all, Boas remarks, is the only scientific proof that the syphilis has been cured, and reinfection in these two cases is out of the question, as he explains It is discouraging to find that a period of latency lasting for three years after a thorough abortive course of treatment under apparently the most favorable conditions does not afford any certain guarantee that the disease has been cured He might possibly have warded off the recrudescence if he had kept up intermittent mercurial treatment during the two years following the supposedly successful abortive treatment

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THE HEALTH EDUCATION OF THE GENERAL PUBLIC*

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The sanitary administrator realizes that there are certain things which the public health authorities must do for the body politic, that there are certain things which the citizenship must do for itself, and that there are certain things which can be done only through the cooperation of the citizenship with the health authorities In order to accomplish anything in a public health way, it is necessary that the sanitary authorities have the financial and moral support of the citizenship If the general public is not informed as to the need for personal and public hygiene and sanitation, it is extremely difficult to secure this These facts have made it increasingly apparent that unless sanitary and hygienic education is brought to the general public the greatest good cannot be attained As a result we have devoted more and more time to lay public health education, and in many instances this has been carried to a high degree of excellence, but in general it may be said that the work has only just begun, in fact that there is at least thirty years of hard work ahead of us before we will achieve the maximum of result

Somebody once said that publicity was the handmaiden of sanitation If this publicity is of the right sort, if it is carried on with a full understanding of mass psychology, it is bound in the end to achieve good results The chief criticism of the work which has been done in the past is that it has been of too spasmodic a character and the results aimed at were only temporary in their nature Too much dependence in the past has been placed on the spoken word and as a result there has been an enormous amount of speech making, too frequently by persons whose zeal exceeded the accuracy of their sanitary information! The spoken word, the mass meeting, has a certain place in public health education, but it should not be forgotten that only those who are really interested in the problem come to hear the lecture It is easy enough to convince a person who knows that he wants sanitary education The great problem is to convince the person who does not know that there is a necessity for his being convinced, or who perhaps has made up his mind not to be convinced In time of grave public danger, as, for example, during a serious epidemic, when everybody wants to know what steps must be taken to stamp out the scourge, the public lecture is an efficient means of rapidly informing a considerable number of people The good obtained in this way is, in the case of adults, apt to be temporary only, and cannot be relied on as a permanent measure Even the most convincing speaker is able to convey only a small portion of the lesson in this way and very often it is speedily forgotten by the hearers There is also the danger that the public, always fickle in such matters, is apt to tire of this continuous stream of speech making and forsake their sanitary leaders altogether The measure which will bring the greatest good does not lie wholly in the spoken word What the American people want is more demonstration and less talk in public health work

Demonstration takes many forms and includes ocular exposition by stereopticon slides and motion picture films These two methods are very good, particularly in the education of children, but the effects lack permanency to a certain degree The stereopticon lecture must be accurate It must be entertaining The pictures must be good and must each one tell its own story If the lecturer can so arrange his subject that he makes no reference to the slides whatever, but can have the pictures appear at the time when he is making a given point, the effect will be better Too many lecturers treat their subject as if they were showing a family album, merely turning the leaves of a lot of disconnected pictures and undertaking to explain what each one is about The lecture itself should be strong enough to stand without the assistance of the slides and the slides should be good enough to tell their own story without the assistance of the lecture When these two are carefully dovetailed together there is produced a strong impression on the mind of the audience, an impression which is received both through the ears and through the eyes This has the advantage that the message in this way reaches the inner consciousness of both ear-minded and eye-minded people

The stereopticon form of demonstration is relatively cheap The upkeep is not necessarily high, and when handled by experts brings fairly good results That there is a demand for this form of public education is shown by the results achieved by the stereopticon loan library of the Public Health Service This consists of some fifteen thousand slides and is available to any one in the continental United States Persons desiring to use the library make an application and are loaned an illustrated catalog from which they choose their slides On the return of the catalog, slides are mailed to them In the box is a frank for the return of the slides after use In cases in which it is desired, a lecture is furnished with the slides The demands on this library are enormous Not only do sanatoriums and physicians requisition slides, but ministers, Sunday school teachers, social workers, neighborhood organizations, and many individuals who desire to give lectures to small groups of friends. This has been the means in the past year of reaching several million people, and while it is believed that only a small percentage of those who heard the lectures retained a permanent impression, that there was a certain spreading of the gospel of sanitation in this way there is no doubt.

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* Chairman's address read before the Section on Preventive Medicine and Public Health at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

Moving picture films have not, on the whole, brought so good results as was expected of them at first. People do not go to a moving picture show to be educated, as a rule. They go for amusement instead, and as a result the moving picture operators throughout the country are more and more shutting out the public health films. The motion picture demonstration has the disadvantage that it reaches people through their eyes only, and the descriptive matter must be written very tersely. This admits of relatively little explanation. The character of the moving picture drama which is most popular would seem to indicate that the motion picture fans are not interested in the saving of life, since invariably there are one or two people killed with every reel. The sanitary scenario, therefore, must be sugar coated, must live up to the traditions of the moving picture stage. This renders the preparation of such playlets extremely difficult, and I am afraid that the cost of production will limit this phase of sanitary education more and more in the future.

It is surprising how much good can be obtained through well-prepared charts. Any one who will study closely the visitors at a public health exhibition will be surprised at the way the public is attracted by a well-made chart. This is not altogether remarkable when it is considered that man is still in the picture writing and reading stage, and the average individual who picks up a new magazine always looks the pictures over first. Charts must be very short and to the point. They must if possible contain a picture or a diagram. They must tell the fact which they are trying to impart in as short and forceful a manner as possible. They must be artistic and the color scheme and arrangement pleasing to the eye.

Well-made models are most excellent, but they are expensive and only those really interested in the subject will take the trouble to come to see them. It is surprising how difficult it is to make a really good model, particularly to make a good model which contains a novel feature. Working models are by far the best, but they are expensive to produce, to operate and to maintain. In every instance the model must be so planned that the person who looks at it cannot receive an impression other than that which it was desired to give. Models which contain a puzzle, which will make people stand in front of them and wonder how they operate, are exceedingly efficient, and I have often wondered why we did not utilize the principles of Mrs. Jarley's wax works more in this connection.

Printer's ink is the great medium of public health education. Intelligent, well-written newspaper articles, prepared after due consideration of the psychology of the average newspaper reader, are of the greatest benefit. It is exceedingly difficult, however, to produce really good newspaper stories which the papers will print and which the public will read. Too much of the public health press agent work of this country is couched in the language of the high school essayist, the point of the story being carefully concealed in the last paragraph. It would be a good idea for the public health curriculum of our universities to afford a course in sanitary newspaper work. Any good newspaper man will tell you that the gist of the story must be in the first few lines and that this must be written in such a way as to tempt the reader to continue through the article. Once his interest has been attracted, he will read through a considerable amount of explanatory matter.

Newspaper articles must be written with an absolute absence of medical terms. They must be good sense. They must be convincing and they must tell a story. It is exceedingly easy to get the newspapers to print news, but it is equally hard to secure the publication of views. Editorial utterances may be read by a certain percentage of the newspaper reading public, but what the average citizen is interested in is found in the news columns. If, however, a single sanitary fact can be crystallized into a single pointed paragraph much better a single sentence, it will be printed. It has been found that much better results can be obtained when the editor is notified that credit need not be given for the article. After all it is not the health authority or his department that is to be impressed on the public mind, but the single fact which it is desired to teach. Special articles in magazines are of great value. They invariably require illustration, a thing which is not always easy.

The use of printer's ink in the publication of special bulletins is another valuable means of public education, provided the bulletin can be made to reach the citizen. This is not so easy as it sounds. Recently several magazines and newspapers have undertaken to distribute free of cost health bulletins to those of their readers who made application for them. This is an excellent idea. It tells the reader in the first place where he can get a certain bulletin. This is of educational value in itself. And second, it makes him want the bulletin enough to write for it. This insures to a certain extent that the bulletin will not be destroyed until it has been read. In the preparation of these bulletins, it should be borne in mind that what the public wants in them is not glittering generalities, but service. The bulletin must be accurate, readable, well illustrated and well printed. A cheap, shoddy-looking bulletin discounts the effect of the matter which it contains.

The demonstration, however, which is of the greatest value is that which shows to the general public just what can be accomplished by sanitation. The health officer who attacks a certain situation in his town and shows to the people what can be done through the application of scientific principles has produced an effect which is lasting in character. The people of New Orleans, for example, have learned once and for all the lesson of the conquest of yellow fever. The citizen of San Francisco is well informed as to bubonic plague, while the campaign against typhoid in Martinsburg has exerted a permanent effect on community life in that city. What we need is a greater number of demonstrations of this sort. The creation of model counties, the up-building of sanitary towns, the increase in civic pride which comes after sanitary rehabilitation, is such that it is not forgotten speedily. The public health nurse is of the greatest value in this connection. She is the connecting link between the shop and the home, the entering wedge of the haven of good health. Hitherto she has been most used in metropolitan districts, but her field of usefulness in the country will be even greater in the future.

The great sanitary hope of the future, however, lies in the health education of the child of today. It is true that the child can be more easily reached through the spoken word than can the adult, that the effect of stereopticon lectures and motion picture demonstrations is more lasting, that the sanitary and hygienic instruction received in the course of the curriculum will do much to make the child of today the sanitary, clean-lived citizen of tomorrow, but, as with the adult, the child must have an ocular demonstration of cause and effect in the prevention of disease and the up-building of health. This must begin with the kindergarten and extend through the graded school, the high school and the college. The subject must not be thrust to one side, used as a stop-gap to fill in a few idle moments. It must assume a place in the educational scheme equal to that now occupied by the three R's, if this is done, and done well, we will build a nation of strong, health-loving people, whose daily life is governed by a working sanitary conscience.

Throughout this address the use of the word publicity has been scrupulously avoided, because to the average mind the word publicity means newspaper exploitation. In the proper sense of the word publicity is the great aim of the public health education of the general public. We, as the sanitary profession, are much in the position of the manufacturer who has a certain article which he desires to market. He must first produce the article. He must be certain that it is a good article, and having arrived at this conviction he must create the demand for it by making the general public share his belief in its worth. We know what we can do in public health work. The general public does not know how much good can be done them. The task which lies before us is to so educate them that they will realize the good which can and will come from the observance of the laws of health. We must create in them a demand for public and personal hygiene, and if, through every medium, we keep this constantly before their eyes, hygiene and sanitation will become household words and rules of action. We would do well to study the methods which have been used in popularizing manufactured articles and to change the plan just enough so that it may better fit this important work which lies before us.

The American Medical Association has already accomplished much in this field. It must do more. It must further the cause of public health education, not only of the lay public, but of the profession as well. It must be a coordinating center of the volunteer educational efforts in order that the work may have a scientific, wholesome basis. We must harmonize and extend the movement. We must move forward with high ideals as the goal. It is suggested that this section take steps to bring to the attention of the Association the necessity for a public health exhibition in connection with our annual meeting, so that we may thereby leave the definite impress of our visit in the tangible form of better health and cleaner living. Ours is a great work. Its opportunities are as vast as the distribution of the human race, and if we but grasp those which are nearest to us, our lives shall not have been in vain. May the deliberations of this section hearten and inspire us for the task which waits us.

An Early Master.—I repeat then once more: a special germ proper to each contagion gives rise to each contagious disease. Epidemic scourges are only engendered or disseminated by their reproductive germs. In all ages, every tongue has spoken it.—Bretonneau, 1855.

THE NONSPECIFIC AND THE SPECIFIC DEFENSE OF THE CHILD AGAINST THE TUBERCLE BACILLUS*

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Soon after birth children begin their contact with infectious bacteria. That they do not succumb to their attacks is due to a certain protective mechanism with which the child is endowed, whereby bacteria are destroyed.

Whether or not a given inoculation will be overcome, and the child go free from infection, or whether the bacteria will gain a footing in the tissues, multiply and produce their specific disease, depends on the efficiency of this natural defense. Sometimes the protection may be insufficient and may fail because of impairment of the defensive mechanism. If we did but realize the universal presence of pathogenic bacteria and the innumerable inoculations which take place in the tiny infant, we would have great respect for this protective mechanism with which the child is endowed.

In the first place, there are few portals of entry for bacteria. The skin offers an almost impenetrable barrier. The main avenues through which inoculation takes place are the nose and mouth, the bacteria entering the body along with air, food and drink. When bacteria enter through either of these portals they come in contact with secretions which possess bactericidal properties, and meet a mucous membrane which is not easily penetrated when healthy. There are also arranged here and there, at points of vantage, masses of lymphoid tissue, the cells of which are so arranged that the bacteria are more or less easily deposited within them. This lymphoid tissue contains the lymphatic elements, which have defensive properties in abundance, in fact, lymphocytes are formed within it. Should bacteria pass through the mucous membranes, or make their way beyond the lymphoid tissue, they are met by what might be termed an internal defense. Here they come in contact with the lymph and various body cells which have defensive properties. The protective elements are found both in the fluids and in the cells. While the leukocytes possess protective properties to the greatest degree, yet other cells have a part in the natural defense.

I desire particularly to call attention to the protective influence of the lymphatic system during these early years. If bacteria pass through the masses of lymphoid tissue, such as those in the throat or vault of the pharynx or those in the intestinal tract, or if they pass through the mucous membranes, they find their course by way of the lymph channels which drain that portion of the mucous membrane or those masses of lymphoid tissue through which the bacteria have passed to the lymphatic glands.

Lymphatic glands are the seat of leukocyte production. They are rich in lymph, consequently afford ideal conditions for destroying the invading bacteria. The importance of the cervical glands in screening out and destroying bacteria can be readily appreciated. Children of the poor, who live under bad hygienic conditions and suffer injury to their mucous membranes, who, because of their method of living, possess lowered resisting powers, and who, further, on account of the bad hygienic conditions which surround them, are subjected to more or less constant inoculations of large quantities of bacteria, suffer almost universally from enlargement of the lymphatic glands which drain the nose and mouth This enlargement of the lymphatic glands is evidence of frequent and massive inoculations

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At the same time that we find enlargements of these lymphatic glands we commonly find enlarged tonsils and adenoids present This enlargement of the lymphoid tissue is to be looked on as a reaction produced by the irritation of the bacteria When we find an enlarged cervical gland and a corresponding enlarged tonsil, it does not mean that the tonsil is the cause of the enlarged cervical gland, consequently, immediate removal of the tonsil is not necessarily called for It rather points to the fact that the tonsil was not able to destroy the invading bacteria, and that they have gained entrance in such large numbers that, in spite of its presence and its protective function, they have escaped through the tonsil and found their way to the gland, causing its enlargement Neither does the enlargement of these cervical glands call for their removal Very often the institution of better hygienic conditions results in improvement in the physical condition of the patient In this event the child may overcome the infection and the gland may gradually return to its normal condition

The importance of these glands is illustrated not only in the cervical group, but in the mediastinal group The mediastinal group of glands bears the brunt of drainage in infections of the respiratory tract In acute bronchitis, likewise in the bronchitis which accompanies whooping cough, measles, scarlet fever and smallpox, the bacteria often penetrate the walls of the bronchial mucous membrane and are strained out in the peribronchial and peritracheal lymphatic glands, sometimes producing enlargement to such a degree as to cause severe symptoms

The enlargement of lymphatic glands in tuberculous infection in the child is well known The enlargement of the glands of the neck when bacilli pass through the upper air passages, of the mediastinal glands when they pass through the mucous membranes of the bronchi, and of the mesenteric glands when they pass through the intestinal mucous membrane are all examples of infection, but, at the same time, these enlargements of the glands are visible evidence of a protective mechanism In no tissue of the body are the natural defensive powers greater than in the lymphatic glands The lymphatic structures are peculiarly active in childhood and gradually degenerate as age comes on They are not so necessary after specific cellular defense against the various bacteria has been developed It is significant that nature has so arranged it that the battle between the invading organisms and the child shall be fought in these structures prior to the time that a specific cellular defense has been developed

I particularly wish to emphasize the importance of these lymphatic structures and this protective mechanism because of the tendency which is all too common today of ruthlessly sacrificing lymphatic structures in the throat and vault of the pharnyx, without giving due consideration to their importance

I am aware of the fact that tonsils and adenoids must often be removed, but I believe that the tonsillar and adenoid tissue, unless it is producing distinctly harmful effects, should be left in situ until the child has grown sufficiently old to have come in contact with pathogenic bacteria in sufficient numbers to have developed a specific cellular defense against them After this, the protection offered by the lymphatic structures is still important, but not so essential as during the earlier period of life

The tonsil is also in great danger today because of the recent discovery of its importance as a focus of infection from which streptococcal metastases spread throughout the body, causing such affections as valvular heart lesions, chorea, and so-called rheumatism

The teaching has gone forth that if we discover the primary focus of infection in a tonsil, and remove it, this will influence the metastases I can see no reason for this being true I can see, however, why the original focus should be removed to prevent further metastases and to relieve toxemia

It seems quite evident that the lymphoid tissue gradually loses its protective importance This occurs as the patient develops specific cellular defense against the organisms which are taken into the body, but, until this has occurred, such lymphatic structures as are found in the mouth and upper air passages should be preserved, if possible, in order to carry out their defensive function

I also realize the manner in which these structures, when enlarged, produce injury to the ear, interfere with nasal drainage and favor infection of the upper air passages I know that they will, at times, also produce cough and bronchitis, but I am fully convinced that many of the coughs and persistent attacks of bronchitis for which operations on tonsils and adenoids are done are due to enlarged bronchial glands, which are not removable, and to thickening of the bronchial wall, which have resulted from infections of these structures Persistent colds of the nature of bronchitis call for a more extensive investigation than that of the upper air passages Not only the tonsils and adenoids should be thought of, but peribronchial thickening and enlargement of the mediastinal glands, as well

The importance of the lymphatic tissue, as emphasized in the discussion which I have given thus far, applies to bacteria in general, but with special emphasis to infections by the tubercle bacillus

Tuberculosis is primarily a disease of the lymphatic glands When the tubercle bacillus passes through the mucous membranes, prior to the time that infection has taken place, it finds itself in the lymph channels and is carried to the lymphatic gland which lies in the course of the lymph stream There is no specific antagonism between the tissues through which it passes and the bacillus itself No such specific inflammatory reaction takes places as is noted in later years To be sure many bacilli are destroyed by the bactericidal action of the lymph, but some will escape and find their way to the lymphatic glands Those glands which are so placed in the path of drainage that they receive frequent inoculations of bacilli, now and then, find themselves unable to destroy the number which enter them, and become the seat of infection Such infections may soon be overcome by the natural defensive properties of the lymph If they are not, however, the bacilli multiply and produce a larger focus As a result of this infection, toxic products are thrown out into the lymph stream, and are carried throughout the body They find themselves, as Vaughan suggests, deposited in the tissues Here they call on the cells to destroy them As a result of this demand, a new function is awakened in the cells—that of destroying tubercle bacilli and their products After the cells have developed this property and taken on themselves a specific antibacillary defense, if bacilli become enmeshed in the tissues an inflammatory reaction occurs between them and the tissue cells, which is entirely different from the phenomena which appear prior to the time that infection has taken place Prior to the time of infection the leukocytes and the body cells, as well as the plasma and lymph, act on the bacilli and destroy them After infection, while the body cells and fluids still possess their nonspecific defensive properties, a specific defense is acquired by the fixed cells Prior to the time of infection, if bacilli pass the mucous membranes and escape the antibacillary action of the lymph elements, they are carried directly to the lymphatic glands, after infection, on the other hand, they are retained in the tissues at the site of entrance and a specific inflammatory reaction is set up Now the struggle for existence on the part of the tubercle bacillus and for its destruction by the tissue cells is fought out at the point of invasion, consequently, primary tuberculosis and metastatic, or superimposed tuberculosis, are entirely different processes The protection is different In one it is entirely nonspecific, depending almost wholly on the lymphatic elements In the other it is both nonspecific and specific, depending not only on the lymph elements, but probably more on the acquired defensive properties of the fixed cells of the tissues to produce specific proteolytic ferments for the destruction of the bacillus

In the child tubercle bacilli are often found in tonsils and adenoids This does not mean that the tonsil and adenoid must be looked on as being sources of danger to the child On the contrary, we must look on them as being masses of lymphatic tissue placed in these exposed regions where bacilli are apt to penetrate the mucous membranes, so that they may exert their protective influence in the destruction of such micro-organisms The finding of bacilli in these structures means that they are passing through them and so far have not been destroyed The finding of bacilli in the lymphatic glands which receive drainage from the tonsil and adenoid tissue shows that the latter have failed in the destruction of the bacilli, and that the micro-organisms have made their way into the deeper structures in spite of the fact that masses of lymphoid tissue have been interposed to destroy them

The probabilities are that specific cellular defense is more active immediately following infection and during the time that the focus is active than it is some time after the infection has healed This supposition is in accordance with clinical observation in tuberculosis After the infection has occurred, except when the inoculation is a very large and very virulent one and the child's vitality is low, the patient is protected, for a time, from the occurrence of metastases But after years pass by the number of metastases increase, and, by the time the second decade has been reached, we find tuberculosis spreading from these original foci and producing clinical tuberculosis in a large percentage of cases This metastatic tuberculosis, however, differs greatly from primary tuberculosis It shows a predilection for tissue other than glandular and assumes a chronic character even in these other structures If, on the other hand, the bacilli are not retained in the glands of the little child prior to the time that infection has occurred with resultant specific cellular defense, acute tuberculosis will occur The child at this period shows very little tendency to chronicity or to healing if the infection escapes from the lymphatic glands It is not until the cells have taken on themselves this specific property of defending the body against the bacillus that we find chronic tuberculosis present But when this has developed, unless the secondary metastases are caused by too many bacilli, the resultant infection is, as a rule, mild in character The bacilli do not find the soil congenial for multiplication, consequently, their growth is interfered with, and the disease takes a chronic course

SUMMARY

1 Immediately following birth the child is protected by a nonspecific cellular and humoral defense

2 After coming in contact with tubercle bacilli, the fixed cells take on themselves a new property, that of producing specific proteolytic enzymes, whose function it is to destroy tubercle bacilli and their products

3 The nonspecific defense is carried on largely by the lymphatic system, collections of lymphatic tissue, such as tonsils, adenoids and Peyer's patches being placed here and there where bacteria are likely to gain entrance to the tissues, so that bacteria may be taken up by them and destroyed

4 When bacilli pass through the mucous membranes or these masses of lymphoid tissue, prior to the time that infection has occurred, they are carried directly to the lymphatic glands, in which they are destroyed or held captive If they withstand the action of the lymph elements, they form a tuberculous focus

5 Practically all tuberculosis, prior to the time that specific defense is created, is confined to the lymphatic glands, the exception being when large numbers of bacilli are taken into the body and find their way directly into the blood stream, by which they are scattered through the body, producing generalized tuberculosis

6 After specific defense has been established, bacilli no longer pass readily through tissues, but are hindered by the fixed cells A specific inflammatory reaction ensues, and the bacilli are either destroyed, or, if not destroyed, prevented temporarily, or wholly, from spreading

7 This defensive inflammation results at times in a stimulation of fixed cells and increased fibrosis, producing encapsulation, at other times, necrosis followed by ulceration and the expulsion of the tuberculous mass

8 The lymphatic structures are extremely important in their protective role prior to the time that specific cellular defense has been attained, consequently, tonsils and adenoids should be spared to the small child, unless indications for their removal are absolute

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ABSTRACT OF DISCUSSION

Dr John Ritter, Chicago I am pleased to see this attempt to stop the promiscuous removal of tonsils The tonsils proper and the lymphoid tissue all around, in fact the whole Waldeyer ring, are really infantile organs and bodies, and they disappear about the fifteenth year, or about puberty, when they have fulfilled their purpose As Dr Pottenger has told us this lymph tissue at the entrance stops the bacilli from infecting the body of the child In the child we have chiefly tuberculosis of the glands but the bacilli usually do not pass very far from the glands of the mouth When we have tuberculosis passing on into the bronchial glands, then we know that undoubtedly some of those bacilli have passed through the trachea into a bronchus and have pressed onward into the lung proper or into the mediastinal glands This is the type of tuberculosis peculiar to children I am emphasizing once more the need for care in diagnosing pulmonary tuberculosis in children. Pulmonary tuberculosis is much more fatal in childhood and much more acute than in the adult. We see very little pulmonary but a great deal of bronchial gland tuberculosis in children. The thing for us to do is to emphasize particularly the guarding of the entrance of the throat and to save the tonsils and to spare this guarding lymphoid tissue as long as we can. When a tonsil is diseased full of openings and crypts then bacilli may get in and be held there and cause disease, still they should be treated and taken care of, and should not be removed until absolutely necessary. In a great many cases where the tonsil has been removed, four, five or six months afterward we find active pulmonary tuberculosis. We may cause activation of an old process or the favoring of a latent into an active process by lowering of body resistance.

Dr. John Zahorsky, St. Louis: We must recognize in children a physiologic process of acquiring immunity to all pathogenic germs. The tonsils make the child immune to a great variety of infections. Infections of the nose, throat and glands are very common in young children. After they get to the age of 8 or 9 they are less susceptible—they are able to resist the infection. A very young baby has to go through all sorts of reactions to become immune. The tonsils are the first line of defense. If you remove much of the Waldeyer ring you have a greater susceptibility of the deep structures, particularly the lungs. In the case of a young child suffering from large tonsils and repeated sore throat, if the tonsils are removed, afterward he would have bronchitis and bronchopneumonia rather than tonsillitis. We must conserve Waldeyer's ring. We must learn to treat the tonsil, not remove it. If infected with pus, get the pus out but do not remove the tonsils if it can be avoided. The young child needs its tonsils. The pediatrists should say whether or not they should be removed.

Dr. J. I. Durand, Seattle: The tonsil is a lymphatic gland which through some developmental fault has been opened to the exterior instead of being covered as all other glands are. The original tonsil must have been submerged. In the present condition the tonsil is wide open in a position to be infected readily. Every crypt in the tonsil may become a culture tube in which bacteria and toxins are elaborated to threaten the organism. I do not believe in taking out all tonsils but it is often difficult to tell when they should be removed and when not. I am inclined to think we err too often in not taking them out. The tonsil is undoubtedly one of the organs of defense but it seems to me that a perfectly smooth wall of scar tissue is a better defense against infection than a wide open gland such as the tonsil. Again does our clinical experience carry out this idea that the tonsil is put there to be a perpetual source of vaccination and bring immunity in that way? Do we not see less infection in children who have had the tonsils removed? Is it not our experience that the general resistance of the child is increased after removal of the tonsils? If the tonsil is simply a lymphatic furnishing the first wall of defense against infection, why are not the bronchial glands just as good?

Dr. St. George T. Grinnan, Richmond, Va.: In Richmond there are about 40,000 negroes. We have a negro dispensary there and I do not think I have ever seen more than one or two cases of tonsillitis in young negroes over 6 or 8 years old. There is a large percentage of tuberculosis of the lungs. Some time ago I saw a young negro with a temperature of 104 F. He had extremely extensive tuberculosis of the lungs. There was another child about 3 years of age. I asked the mother if the other child was sick and she said "No." I took its temperature and it was 104 F. She died first. We have much tonsillitis there among the white people. It is rare to find tuberculosis of the lungs among the younger white children. A large number have glandular tuberculosis, particularly at the angle of the jaw and the cervical glands.

Dr. F. P. Gengenbach, Denver: I would like to ask Dr. Pottenger how much importance he attaches to the persistent enlargement of the anterior cervical glands? I appreciate that we cannot always tell by the appearance of the tonsils whether they should come out, but I do consider the persistent enlargement of the cervical glands of importance. I also want to ask as to the value of removal of the tonsils in cases of tuberculous adenitis.

Dr. C. G. Kerley, New York: Dr. Pottenger is rather lenient with a diseased tonsil. A tonsil that is capable of harboring tubercle bacilli or any other bacteria should to my mind be removed, regardless of the age of the patient. I prefer that tonsils be not removed in very young children if it can be avoided with safety to the patient for the reason that the results of enucleation of the tonsils in the very young have not always been brilliant in my patients. The tonsil performs a function in the development of the throat. I have seen adhesions of the pillars and deformities result when early tonsillectomy had been performed. A point regarding adenoids and the presence of diseased tonsils is frequently overlooked. In diphtheria, measles, scarlet fever and influenza, they furnish a favorable culture field for infection which we always have in the throat. It is the child with adenoids and diseased tonsils who gives us our cases of acute otitis, mastoid diseases and sinus thrombosis; therefore as a prophylactic measure, enucleation of diseased tonsils and adenoids is to be advised regardless of their effects in other ways. I have never seen a case of tuberculous adenitis in a child whose tonsils were properly removed. I refer, of course, to complete removal of the tonsil and capsule.

Dr. F. M. Pottenger, Los Angeles: Dr. Kerley states that when a tonsil has been properly removed he has never seen a case of tuberculous adenitis in the cervical glands which receive drainage from that organ. I look on the infection of a gland where the bacilli have passed through the tonsil as indicating that the bacilli have simply passed through the first line of defense and taken the second trenches. It does not mean that the tonsil is a factor in causing the infection but that, in spite of the tonsil, bacilli have been able to break through to the glands. I agree with Dr. Kerley absolutely in his attitude toward tonsils which are definitely diseased. They must be removed unless the focus can be removed otherwise. Answering Dr. Gengenbach's question, if I had a patient with persistent enlarged glands which were giving out bacteria into the deep structures and producing metastatic infection, the infection would have to be relieved or the gland removed. The principal defense of the child at birth is in the lymphoid structures which manufacture lymphocytes, but as he gradually comes in contact with various bacteria, he immunizes himself. He builds up a specific power in his cells to overcome bacteria. The lymphatic structures manufacture leukocytes and are the greatest protective factors during this early period when the specific defense is absent, and we ought not ruthlessly sacrifice them. We ought to give the child this protection as long as necessary. It has been mentioned that the tonsils are open glands, and, from their structure they are apt to be infected, and consequently are sources of danger. What about Peyer's patches? We do not take them out, yet they are open glands. It is possible that these glands are furnished with crypts that they may take in bacteria more readily because there is no place in the body of the little child where bacteria can be destroyed so readily as in these lymphatic structures. They become infected, but as a rule they do not become seriously infected until the time when they are no longer necessary to the defense of the child. Their period of greatest activity is when the child needs it most. After the child has come in contact with the various infectious bacteria and built up his specific defense, the lymphatic tissue becomes less important and atrophies. The point that I wish to emphasize is, if possible the child should be given advantage of the natural protection furnished by the lymphoid tissue, until specific defense has been attained. If the tonsils and adenoids become infected and become sources of metastatic infection they must be removed. If they make pressure and threaten injury to the ear, or interfere with nasal drainage it may be necessary to remove them but they should not be removed in the small child without cause. I would not remove the tonsils in case of tuberculous cervical adenitis. We rarely see tuberculosis of the tonsil, and when we do it is usually an accompaniment of an advanced generalized tuberculosis. When tonsillar tissue shall be removed it is a subject that requires judgment. Each case should be considered by itself, but the rule should be to give the child the benefit of this protection until he is able to build up the specific cellular defense which protects him in later life.

THE USE OF BOILED MILK IN INFANT FEEDING AND ELSEWHERE*

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In our progress upward, whether in religion, in economics or in the science and art of infant feeding, we advance by epochs, and often the gospel of one epoch becomes the heresy of the next, only to become again the gospel in the light of some newer truth. In the first flush of bacteriologic activity, the idea that infantile diarrheas were infectious and that milk carried pathogenic micro-organisms naturally led to sterilization of the baby's milk by heating it. Then scurvy intruded itself, and pasteurization at lower heat, yet high and long enough to destroy pathogenic germs while influencing the milk less, took its place. But pasteurization was still held as only less objectionable, and for the same reasons, than sterilization, and offered serious technical difficulties. There naturally followed a demand for a milk clean and fresh and nearly enough germ free to be safe without heating. By analogy with human milk, too, raw cow's milk seemed obviously preferable and became our standard.

Increased experience with boiled milk, especially by those who had long used raw milk, led to the growing conviction that boiled milk is more easily digested by the dyspeptic infant and hence by the well infant, than is raw milk, that it is not accompanied in any serious measure by the dangers that had been attributed to it and that it is obviously safer from an infectious standpoint than any raw milk could possibly be. It was then shown that raw milk and boiled milk were not identical physiologically, and that this difference probably explained the unequal digestibility of the two milks. And so today, if one may read the times aright by the literature and the practice of an increasing number of pediatrists, we have entered on an epoch in which boiled milk is looked on with favor for both physiologic and bacteriologic reasons. In all of these years Jacobi alone has always used boiled milk.

There has naturally grown up in this country a strange transitional medley of ideas of different men who follow these changes with an unequal pace, much to the amusement and often unconcealed disgust of the nonpediatric physician, who sees in our progress only a change from one idea to another. Our textbooks nearly all favor raw milk, if pure. The literature is increasingly more favorable toward boiled milk. The newspaper and magazine writers, who have become a tremendous factor in popular education, get their inspiration from standard textbooks and dwell on the evils of boiled milk and the dangers of raw milk, and advocate pasteurized milk as a popular measure. Boards of health, city councils and philanthropists keep the same pace, and the poor mother who reads the popular treatises on the baby and the newspaper and magazine articles that seem so authoritative is amazed at the physician who tells her to boil the baby's milk, and especially so if she has already provided herself with certified milk! In European countries, like Germany and France, on the other hand, milk is boiled with hardly a thought of raw milk as a safe infant food.

The ultimate test of any therapeutic measure in infant feeding is the baby himself, the living, clinical, digesting baby, that often laughs at our theories and weeps over our science. The question of whether boiled milk has any overweighing superiority over raw milk, or vice versa, cannot be determined by such didactic considerations as the fact that raw milk teems with bacteria, while boiled milk is relatively sterile, that one is a living, the other a dead food, that one undergoes many changes in the process of heating, while the other undergoes a few less in the process of keeping, that one coagulates in the stomach in large, hard curds, and the other forms fine, soft curds, nor yet by the sum total of all of these considerations. The baby in his own little way decides which is the better of these two poor substitutes for his natural food, and leaves it to us to find the explanation. Empiricism comes first and science follows with an explanation. It is for that reason that, in the science and art of infant feeding, art is long and science short.

With this thought ever in mind, our subject naturally unfolds itself under four heads:

1. Does raw milk offer advantages over boiled milk?
2. Does boiled milk offer advantages over raw milk?
3. Does pasteurization solve the problem?
4. Does certified milk solve the problem?

The obvious argument in favor of raw milk is a priori that human milk is raw. And yet the objection intrudes itself that cow's milk is not human milk, any more than raw corn and oats, the natural food of the older calf, are the natural food of the child. What scientist shall tell us that, per se, cow's milk becomes practically any more unnatural because it is heated, or that heating imparts to it a greater degree of unnaturalness than does prolonged refrigeration, the development of a host of bacteria, the unavoidable chemical change that takes place in kept raw milk, or the addition of barley water or sodium citrate, all of which are so foreign to the baby's natural food, which flows warm and sterile and immediately into its mouth from its mother's breast? The baby alone can tell us which is the more unnatural.

Raw milk again contains ferments, vital principles, vitamins, or what not, the destruction of which is said to injure the milk in some vital particular. And yet here we enter on hazy territory. Are those of one species as vital in another species as in their own, as we know, for example, that the antitoxins and antibodies of milk are specific? Or do they retain their properties under the conditions that are inseparable from an unnatural and nonspecific food in a sufficient degree to offset other advantages that might come from heating the food, for example? Or is there tangible evidence, either experimentally or as shown in the reaction of the baby, that boiling for a short time destroys these properties in a sufficient degree to constitute a noteworthy menace? Those of us who have used raw milk for years, and then milk boiled for from two to five minutes for an equal number of years have been able to make out no difference that could be attributed to an absence of such vital principles. Nor do European clinicians, notably the French and Germans, who use boiled milk almost exclusively, report any unfavorable effects as compared with our own clinicians who use raw milk.

The only seeming exception to this is scurvy, to which ultimately all our discussions along this line revert. Not so much that scurvy *is* legitimately adduced as an argument against boiled milk, as that it is always mentioned in that connection, and has thereby assumed the role of an argument to the superficial reader The discussion of scurvy has furthermore become so inseparable from the report in 1898 of the committee of the American Pediatric Society appointed to investigate infantile scurvy in America,[1] that that report has gradually been given an unintended and unwelcome prominence in support of the idea that boiled milk is seriously scorbutic This report for its comprehensiveness, for its interpretation of difficult data, for its finality up to the present time, and for the fairness and even mildness of its conclusions, to quote Morse,[1] should stand as a model for those who glibly hark back to it as an argument against boiled milk The final statement of this committee deserves to be quoted in full in this connection, as follows

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* Read before the Section on Diseases of Children at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916.

> The conclusions to be drawn from this combined study of etiology and treatment seem justifiable only to the following extent
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> 1 That the development of the disease follows in each case the prolonged employment of some diet unsuitable to the individual child, and that often a change of diet, which at first thought would seem to be unsuitable, may be followed by prompt recovery
>
> 2 That in spite of this fact regarding individual cases the combined report of collected cases makes it probable that in these there were certain forms of diet which were particularly prone to be followed by the development of scurvy First in point of numbers *here* are to be mentioned the various proprietary foods
>
> 3 We find that in general the cases reported seem to indicate that the farther a food is removed in character from the natural food of a child the more likely is its use to be followed by the development of scurvy

One of the committee of five begged to be excused from subscribing to the report, because of "lack of opportunity to study the report requisite for a subject of so great importance" Another member handed in a minority report containing the clause "Sterilizing, pasteurizing or cooking of milk food is not per se responsible for the scurvy condition" In the discussion that followed there was considerable opposition, led by Christopher, against publishing any "conclusions" whatever In the intervening eighteen years we would have honored this report more by pointing out fallacies than by permitting it to be given the role of an argument against boiled milk as a noteworthy factor in the production of scurvy And yet no single decisive addition has been made to it, only added emphasis on certain phases, such as the importance of the individual, the role of the canned food, the possibility of an infectious nature, etc, leaving the specific agent, even whether active or passive, yet to be determined

It is a strange trait of human nature, to which the pediatrician is no exception, that we highly respect our own views and pay little attention to what others equally qualified have found in other lands and with other languages Reports from France and Germany, where boiled milk is used almost exclusively, seem to indicate that they have less scurvy than we The incidence of scurvy with us is of course not due to the use of raw milk, nor yet of boiled or of pasteurized milk, but in all probability to the widespread use of certain proprietary foods This does not affect, however, the reports of French observers like Budin, Variot, Anderodias, and others, who tell us that they have fed thousands of babies for long periods of time on milk boiled not five minutes or less, but even thirty or forty minutes, without producing a single case of scurvy To say that these reports date back to a time when scurvy was not recognized, as if scurvy could possibly fail to be recognized by any pediatrician who is looking for it, hardly seems justifiable Thus in 1910 Anderodias[2] made the following statement in favor of sterilized milk, which is significant in this connection, as well as in its strange provincialism "In the consultations for nurselings in which we feed sterilized milk, as in those of Budin, Variot, and Maygrier, one has yet to see an infant with scurvy, while abroad in England, and especially in America, where laboratory milk is commonly employed, the cases of scurvy are very frequent"

Even if boiling milk does rob it in part of some antiscorbutic property, and it would be unwise to deny that prolonged boiling may, or does, the rarity of scurvy, its magic-like curability, its absolute preventability by the use of small amounts of orange juice, and the fact that it has been cured with the usual rapidity by the use of boiled milk alone[3] would seem to deny to scurvy that commanding position which it has here arrogated to itself The fact that we use orange juice after the third or fourth month may account for the fact that we have had no scurvy in our own patients fed on boiled milk This would only serve to emphasize the trivial nature of scurvy if it can be prevented by so simple a dietetic measure, which has always commended itself even without any reference to scurvy

The possibility of less striking minor conditions analogous to scurvy, such as anemia, or underdevelopment, or rickets, could easily be imagined as resulting from a food denatured by heat And yet is there one particle of evidence to this effect on which one can really place a finger? Hardly a single textbook, British, American, French or German, even mentions boiled milk in connection with rickets or such allied conditions

Does boiling, with its formidable array of changes in the milk, such as partial coagulation of lactalbumin, caramelization of some milk sugar, its action on the casein, inhibiting coagulation with rennin, etc, lessen the nutritive value of cow's milk as an infant food? Again we must say that cow's milk is not human milk, in which the loss would be unquestionable, and that the benefits derived from boiling an unnatural food may just as reasonably be greater in one direction, for example, in rendering the curd of cow's milk more nearly like that of mother's milk, than the harm done in another Again we must appeal to the baby in so empirical a question, and I can give no better summary of its interpretation than to quote the well-known, comprehensive conclusions of Janet E Lane-Claypon,[4] whatever one may think as to the limitations of such a method of investigating the matter In the final summary she states that "such small differences as have been found in the nutritive values of raw and of boiled milk have been in favor of boiled milk"

The last, and, among mothers, the almost universal objection to boiled milk is that it is constipating This objection might well be answered in four words, "Thank God for constipation!" The baby that is fed on cow's milk and is constipated is digesting its food perfectly. The physician is as happy over a formed stool as the mother is sad. The only exception is fat constipation, the *Milch Nahr-schaden* of Czerny, a disturbance due to fat, and this occurs with both boiled and raw milk. To my mind it occurs more regularly with boiled milk than with raw milk, and this seems to me to explain why fat constipation is so much more a vital part of German literature than of ours. Czerny[5] considers it the regular reaction of the infant to too much milk hence *Milch Nahr-schaden* and not *Fett Nahr-schaden,* and his pupil Stolte considers the milder firm Seifen-stuhle, and to my mind rightly so, as the desideratum of artificial feeding with cow's milk. With raw milk digestive disturbances are more apt to occur before enough milk can be given to produce a decided soap stool; with boiled milk we can give more milk without producing acute disturbances, and the more serious picture of *Milch Nahr-schaden,* as described by Czerny, can more readily follow if we overstep the baby's tolerance for milk. In our former experiences with high fat and low protein mixtures it was fat diarrhea and not fat constipation that we dreaded.

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[1] The American Pediatric Society's Collective Investigation on Infantile Scurvy in North America, Arch Pediat July 1898 p 482

[2] Anderodias J La pratique des maladies des enfants J B Baillière et Fils Paris 1910 p 315

[3] Brennemann J Boiled vs Raw Milk an Experimental Study of Milk Coagulation Together with Clinical Observations on the Use of Boiled and Raw Milk The Journal A M A Feb 22 1913 p 575

[4] Lane-Claypon Janet E Report to the Local Government Board on the Available Data in Regard to the Value of Boiled Milk as a Food for Infants and Young Animals Darling & Son Ltd London 1912 No 63 New Series p 1

That boiled milk in proper therapeutic amounts is to an annoying extent more constipating than raw milk I have not been able to satisfy myself. In digestive disturbances with loose stools it is certainly more constipating, or shall I say more easily digested? Or is it not more accurate to say that raw milk is here more laxative, that is, harder to digest, than that boiled milk is more constipating. Even if boiled milk is somewhat constipating, this is so minor an evil as compared with even moderately loose stools, which in the cow's milk fed infant are incompatible with progress, and the condition is so easily rectified by the various measures with which we are familiar, and so naturally corrects itself as the older infant gets a more varied, less milk, diet, that it is hardly worth consideration if there are benefits that more than compensate.

DOES BOILED MILK OFFER ADVANTAGES OVER RAW MILK

The first and most obvious advantage is bacteriologic, a relative freedom from pathogenic microorganisms, which is primarily the object of boiling. The relationship of bacteria to gastro-intestinal disorders is not a closed subject, but it would be a wild flight of the imagination to think that they were not of decided importance, and in ileocolitis we know that we have an infection. Normal raw milk, furthermore, apparently contains certain properties that determine a bacterial growth that is not pathologic, and boiling milk destroys this property, or destroys the normally developing bacteria so that the milk is then subject to decomposition, which raw milk is probably not. Such decomposition might lead to the development of toxic products. Outside of the fact that such a danger is more of theoretical than of practical interest is the evident fact that this danger is avoided by not having the milk boiled until it reaches the consumer, the only measure that commends itself.

We are told, on the other hand, that boiling milk destroys bacteria, but not their toxins, but are these less harmful in raw milk where the bacteria too are permitted to live? Nor does boiling milk carry with it the idea that we shall relax our efforts in favor of clean fresh milk that is relatively free from these bacteria and their toxins. The occurrence of such toxic products in normal milk is again interesting, rather than practically important. Tyrotoxicon was discovered once, and to my knowledge, never again. And is not real buttermilk made from milk that has soured, or spoiled naturally, known to be one of our greatest therapeutic measures in gastro-intestinal disorders?

When we leave the gastro-intestinal tract there is no longer any doubt as to the danger of infection from milk-borne bacteria. Epidemics of scarlet fever, typhoid, streptococcus sore throat, dysentery and other diseases have been reported in great number. These could not occur if the milk was boiled in the home. The possible transmission of tuberculosis through raw milk, with its far-reaching possibilities at least, backed by authority that cannot be disregarded, need only to be mentioned. The very unsettledness of this problem tends toward laxness, whereas its possibilities demand the same precautions as if its maximum danger were established. Heating the milk alone removes this possibility in a manner that even efficient universal tuberculin testing of cattle could not approach.

The second advantage, to my mind, is a physiologic one. Even though we use raw milk as a routine, when the baby has a diarrhea or an indigestion, we boil the milk. Why? Because boiled milk is constipating. Why? Do any of us know of any better reason than because boiled milk is more easily and quickly digested, liquefied, and absorbed than is raw milk? And if it is more easily digested during digestive disturbances, then why not also in health? Then why not feed it as a rule, unless there is some overweighing objection, which we have failed to find?

After having used in succession raw and boiled milk, each almost exclusively for six or seven years, there is no doubt in my mind that babies are, in general, harder to feed on raw milk than on boiled milk, and that the explanation is physiologic, not bacteriologic. The most important symptoms that characterize this difference in digestibility are, in our experience, as I have elaborated elsewhere,[3] diarrhea, or at least loose, slimy, imperfectly digested stools, vomiting, colic and discomfort, and in many cases, the occurrence of hard, bean-like tough casein curds[3] in the stools.

The explanation for this difference in digestibility seems clearly to be in the relative coagulability in the stomach of the casein of raw and of boiled milk. Raw milk has been shown to coagulate rapidly in the stomach in large tough masses.[3] These become increasingly larger and harder for about two hours, then yield gradually to peripheral digestive liquefaction. At the two hour period many of these curds are as large as golf balls, and can be thrown on the floor without being broken. Several times in my series of experiments[3] they could not be returned from the stomach by vomiting, even though one was delivered that was ½ to ¾ inch thick, and was five inches long, extending at right angles at one end for 2½ inches, and for 1½ inches at the other! At the end of five hours there were still curds in the stomach of even greater hardness than before, and as large as almond kernels, closely resembling in every way the hard curds of infant stools. In no single experiment, nearly 100 in all, was there ever an exception to the general facts as here stated. Boiled milk, on the other hand, with equal regularity formed fine, soft fragile porous curds of the consistency and appearance of a good custard finely broken up These, too, increased in size and density for about two hours, but so much less than those of raw milk that they never appeared larger than very fine gravel The lesser density, the greater fragility and porosity, the lesser distance to be traveled by peripheral digestion, for curds do not soften and disintegrate en masse during digestion, would lead me to think that the boiled milk curds offer digestive advantages over those of raw milk that are of determining significance I cannot refrain from again emphasizing, not alone to the pediatrist, but also to the internist, who feeds patients, with gastric and duodenal ulcers, with typhoid fever, pyloric stenosis or any other condition in which a soft food seems indicated, that raw cow's milk is only in appearance a liquid food In the stomach itself it becomes one of the most peculiarly insinuatingly, insidiously, increasingly, uniquely solid foods that we can give to a patient, and one that was manifestly intended only for a calf, as has been so well emphasized by Chapin, to prepare the way for its later diet of corn and oats and grass Boiled milk or milk modified in the many other ways so familiar to the pediatrist is relatively a liquid food

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[5] Czerny, A.: Des Kindes Ernahrung, Ernahrungsstorungen und Ernahrungstherapie, 1909, Franz Deuticke, Leipzig und Berlin.

But as before, the ultimate test is the baby Does the baby, in spite of the fact that nowhere else is a hard, tough, rubbery mass as large as a walnut or a golf ball considered as easy to digest as the same substance in a softer finer state of divisions, does the baby form an exception and digest equally well the large and hard mass as the fine soft mass? Does it digest a distance of a half inch as quickly as a distance of one-sixteenth of an inch, to say nothing of relative density and porosity? Is it not peculiarly significant in this very connection that Finkelstein[6] warns us, and have we not confirmed it over and over again and watched over it most carefully, that albumin milk must contain only most finely divided, almost invisible curds, that with coarsely granular albumin milk we can safely expect dyspeptic symptoms? Whether it is a question of the relative lengths of the radii through which digestion must travel or of some irritating effect of a foreign body leaves us indifferent

And is it not also of significance in this connection that nearly all of our therapeutic measures that aim to adapt cow s milk to the baby, no matter what our theoretical purpose may be, have one thing in common and only one, and that is to make the large, hard curd of cow's milk more like the small soft curd of mother's milk? What other explanation could we find for the fact that for the same condition different physicians will prescribe mother's milk, diluted milk, boiled milk, condensed, powdered or dried milk, pasteurized milk, malt soup, milk that has been precoagulated and finely divided by agitation, a process that prevents recoagulation, as I shall show in a paper soon to be published,[7] precoagulated, either by acids, as in buttermilk, or by rennin, as in pegnin or chymogen milk, or by both, as in albumin milk, milk alkalinized with sodium or potassium salts, milk of magnesia or lime water, citrated milk, so much in favor in England and with some of us, milk diluted with cereal water, so long advocated by Jacobi, and so effective as a curd attenuant, high fat and low protein, or cream mixtures, whey and the split protein, and so on to the end of the list?

The most concrete, discussable evidence of the relative indigestibility of raw and of boiled cow's milk, as interpreted by the baby, is the hard curd of the stools Babies fed on raw milk will ever and anon, as pointed out independently by Ibrahim[8] and myself,[9] and since amply confirmed by others, show hard, bean-like curds in the stools, which bear no resemblance to ordinary fat curds Commonly they occur in decidedly undigested, frequent stools, and are then whitish or pale greenish, like the rest of the stool, large and relatively soft, and resemble very minutely the gastric curds of raw milk If the stool approaches the normal in consistency, and what is of greater importance, in frequency, the curds are smaller, harder and more bean-like, and have now acquired an amber color from their yellowish or brownish environment

If the milk is introduced beyond the pylorus with a duodenal catheter, as has been done by Hess,[10] the curds no longer appear in the stools of a baby that has produced curds when fed into the stomach In this way the large gastric curds are avoided That smaller ones are formed in the intestines which are, however, completely digested, is probable from the fact that normal feces will coagulate milk and that hard curds, indistinguishable from those here under discussion, are formed when raw milk is injected into the rectum of an infant[3] There seems little question that these hard curds of infant's stools are the gastric curds of raw milk that have not been completely digested In every case in which I have seen them, experimentally or otherwise, they have, without exception, disappeared when the same milk formula was boiled two to five minutes With them has disappeared the indigestion, except in those cases that were so severe that the milk, even though boiled, had to be cut down or withdrawn entirely for a short period, because the sugar and fat it contained could not be tolerated under the conditions present and kept up the indigestion

Two exceptions have been taken to these statements, which in no way detract from their practical significance

First, it has been claimed that hard curds not infrequently occur in normal stools This has not been my experience Almost without exception they occur in dyspeptic stools in direct ratio to the degree of indigestion Occasionally they occur in a nearly normal stool, when there are three or four stools instead of a normal one or two, in the twenty-four hours, and when they are a little soft and off color The interpretation of "normal" introduces an individual factor, which here notoriously lacks precision When they occur in nearly normal stools they represent an unstable state of equilibrium, which is a frequent occurrence in infant feeding, either they disappear, and with them the indigestion, or else the indigestion becomes worse and with it the curds become larger, whiter and more abundant I believe that isolated curds can and do occur at times in an otherwise normal stool, in those cases in which the normal run of curds are completely digested, but an occasional accidental curd of the first magnitude, a frequent occurrence in both gastric and beaker experimentation,[11] will not have time to be completely digested and passes through, as would a penny In producing stool curds experimentally,[9] and I have never failed to produce them in any baby in whom I have tried it, by giving him enough raw milk, the stools have always become dyspeptic, and became so in proportion as the curd output was abundant Occasionally the indigestion became sufficiently severe that the experiment had to be discontinued quickly by boiling the milk, with an invariable disappearance of the curds and of the indigestion In many babies it would be wholly unjustifiable, experimentally or therapeutically, to change the milk from boiled to raw, and in nearly every case one can foretell with great accuracy the probable result of such a change, both as to curd output and as to indigestion Never anywhere in infant feeding have I seen an unfavorable digestive effect from changing raw milk to boiled milk

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[6] Finkelstein, H and Meyer L F Ueber Eiweissmilch Jahrb f Kinderh 1910 xxi 655 683

[7] Brennemann J The Coagulation of Cow s Milk in the Human Stomach (to be published)

[8] Ibrahim J Kaseinklumpen im Kinderstuhl in Zusammenhang mit Rohmilchernahrung Monatschr f Kinderh 1911 x 55

[9] Brennemann, J A Contribution to Our Knowledge of the Etiology and Nature of Hard Curds in Infants Stools Am Jour Dis Child 1911 i, 341

[10] Hess A F The Pathogenesis of Casein Curds in the Stools of Infants Am Jour Dis Child 1913 v 457

Second, they are said to occur on boiled milk I have seen a very few times, very small and very few thread-like, rather soft hard curds, as an isolated occurrence in the stool of a dyspeptic infant fed on boiled milk, never as a continued occurrence The individual factor in what constitutes boiling, as to how, and how long it is done, whether in a double or a single boiler, the actual degree of heat employed, etc, might easily be a deciding factor There is, furthermore, no reason why in patients with a diarrhea the rapid peristalsis should not sweep through even the finer gastric curds of boiled milk Only those who have had no extended practical experience along these lines could permit this to detract from the statement that, in essence, the hard curd is a raw milk phenomenon

Hard curds will occur in the experience of different men in proportion to the amount of casein in their raw milk mixtures When we used raw, high fat, low protein whey mixtures we saw them only as an occasional curiosity in diarrheal stools With simple raw milk and water dilutions, I am sure that we would find them frequently with such concentrated mixtures as we now use Thus Ibraham[8] changed the milk from boiled to raw milk in the regular food of ten cases that had normal stools, and found hard curds in three of them after the change During the fat-free milk flurry, while we still used raw milk these curds reached their maximum incidence, both because we naturally used more milk in our mixtures and only in dyspeptic infants, and because of all hard curds the fat-free milk curd is the hardest and largest[7] Now again with the use of boiled milk the hard curd has become a negligible factor in our own cases We see them only in the cases of others that have been fed raw milk My own experience has led me to think that hard curds do not presuppose an inherently peculiar gastric juice, but rather that they occur in any baby when digestion for the time being is not perfect, or in any otherwise normally digesting baby that gets more raw milk than it can stand

Shall we conclude from all this that the casein of cow's milk is hard to digest by the baby as we all once taught so positively? And by "casein" I mean the casein of raw milk, because boiled milk casein is modified casein, just as truly as if we used sodium citrate or barley water To my mind this question admits of only one answer positively yes When milk is boiled or otherwise sufficiently modified, as by the use of sodium citrate, milk of magnesia, or adequate dilution, we too see no clinical picture that we can recognize as casein indigestion We should therefore no longer speak of the digestibility of milk unless we mean raw milk, but of the digestibility of raw and of boiled milk For all of these reasons I venture to record my surprise when in a recent symposium in his contribution Holt[12] makes the statement without any qualifications along these lines "When the question is asked, What are the symptoms of protein indigestion, or intolerance? we are compelled to reply that at present we cannot mention any definite symptom, or group of symptoms, which we can positively attribute to the proteins in the sense that we can attribute other definite symptoms to the fats and to the carbohydrates"

Whether the casein is the active agent in raw milk indigestion is perhaps an open question Possibly some other constituent of raw milk causes the indigestion, with the resulting nondigestion, rather than an indigestion of the casein curds It is my own conviction that the casein is as a rule the active agent The digestive disturbances that follow the eating of corn, grapes, apples, orange pulp, peanuts, etc, are, to say the least, suggestive And our standard therapeutic advice that food must be thoroughly masticated and finely divided is either of no value or else it is of great significance in this connection The fact that the indigestion disappears when the milk is boiled can, in our present state of knowledge, be explained only by the fact that the casein is so modified by boiling that it no longer presents any difficulty in digestion No other constituent, so far as we know, is changed in any manner that could explain this difference in the digestibility of raw and of boiled milk Whether we have a casein indigestion or nonindigestion of casein does not affect our main contention that raw milk causes digestive disturbances that can be removed by boiling the milk, and that this difference is probably causally connected with the one tangible difference between raw and boiled milk, namely, the nature of the curd formed in the stomach

In spite of the opinion that the casein is usually the responsible factor in raw milk digestion, and that the hard curds of the stools are the most evident symptom of casein indigestion, it seems to me unwarranted to classify the occurrence of hard curds in the stools alone as "casein indigestion," as is done in some quarters, as if the casein in all the cases actively caused the hard curd, as we know that the fat causes a soap stool or the sugar a fermented stool In a dyspeptic infant with hard curds in its stools removing the sugar from the raw milk mixture, thereby lessening the frequency of the stools and slowing peristalsis, may cause the hard curds to disappear, that is, a sugar diarrhea may cause a nondigestion of the casein Furthermore, the same infant that has a "casein indigestion" will digest perfectly the same casein or larger amounts, in the same concentration, if it is modified by boiling or by the use of sodium citrate, that is, the "casein indigestion" should have been called a raw milk casein indigestion, for it no longer is a casein indigestion when the milk is boiled Again, casein indigestion, to my mind, most commonly manifests itself in discomfort, colic, vomiting, with or without dyspeptic stools, and without the presence of hard curds, that is, we have casein indigestion without "casein indigestion" The occurrence further of an occasional hard curd in a normal, or nearly normal, stool is no more an evidence of "casein indigestion," for reasons given above, than is the presence of a piece of incompletely digested tough beefsteak an evidence of beefsteak indigestion In both instances an unusually large hard mass of food passed through the intestinal tract before it was completely digested

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[11] Footnotes 3 and 7

[12] Holt L Emmett The Digestibility of the Proteins of Milk and Their Role in Infant Nutrition Arch Pediat 1916 xxxiii 13

In our practical experience we feel that we can safely give much larger amounts of milk and more concentrated solutions when we use boiled milk than when we use raw milk We feel that we can begin feeding nearly any healthy baby of any age with one-half milk and one-half diluent, and we give straight milk much earlier than formerly Possibly the simplicity of such ideas is the only thing that commends them, as compared with other methods that lead to the same result, but simplicity is a much longed for factor in infant feeding We feel, too, that we approach the baby with a greater assurance of immediate success if we boil the milk than if we use it raw Especially is this true in digestive disorders, and in all institutional work where babies are massed together That a large percentage of healthy babies will apparently digest equally well raw and boiled milk within therapeutic limits is, of course, evident We nearly all, however, use some method of modifying the curd of raw cow's milk, whether we dilute the milk or use barley water, or lime or sodium citrate In our experience boiling commends itself as an excellent casein modifier that at the same time effectually disposes of the bacteriologic problem

DOES PASTEURIZATION SOLVE THE PROBLEM?

If pasteurization did not offer almost insurmountable technical difficulties in the very homes in which it is most needed, or if commercial pasteurization were reliable, then it might at least solve the bacteriologic problem The physiologic problem remains unchanged as pasteurized milk is in this respect essentially like raw milk[3] Commercial pasteurization would still be open to the objection that such milk would have to be kept for at least twenty-four hours, subject to decomposition or other abnormal bacterial activity The relative activity of antiscorbutic or other allied properties in pasteurized and in boiled milk, the actual idea back of pasteurization, remains to be measured In our present state of knowledge it can hardly offset the manifest advantages over pasteurization of boiling milk in the home

DOES CERTIFIED MILK SOLVE THE PROBLEM?

There can be but one opinion on the question of whether a food for infants that is an excellent culture medium, that is furthermore subject to many opportunities for conditions favorable to bacterial multiplication, should be safeguarded by all the means advocated by our milk commissions Certification cannot, however, be imposed without making the milk so expensive that it is beyond the reach of that vast majority who need it most That ordinary milk boiled in the home is a safe food for infants in this very social stratum has been abundantly proved by the Infant Welfare Society of Chicago, where such home-boiled milk is used in the large majority of cases with almost incredible results Bacteriologically, certification alone does not even approximately put certified milk in the same class as boiled milk It offers the advantages that cannot yet be measured of being biologically active, as compared with boiled milk Physiologically it is still raw milk, and that is why many of us boil certified milk

In conclusion I wish to say that I in no way undervalue the very definite disorders that are due to the fats, the sugar and the salts of cow's milk, when used as an infant food I am inclined, however, to believe that in these latter days we have gone too far astray from the fact that the casein, that is, the casein of raw milk, too, plays an important role in the digestive disorders of infancy, that, again, as nearly all of our therapeutic measures attest, we must not pass lightly over the old fact that the outstanding difference in the composition of cow's milk and of human milk is in the relative amount, and hence coagulability, of the casein And I venture the belief that if milk boiled two to five minutes in the consumer's home was as popular today as is raw or pasteurized milk, babies would suffer less

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ABSTRACT OF DISCUSSION

Dr C G Grulee, Chicago The essayist is much in accord with my ideas I have felt for many years that scurvy had been held up as a scarecrow to keep people from using boiled milk I do not remember having seen a case of scurvy for the past two years I use boiled milk and boiled certified milk The most important statement Dr Brenneman made was that he had never seen a baby who did not do as well on boiled milk as on raw milk I question very much if boiled milk is anything like as strong a factor in the production of scurvy as has been declared This, in my opinion has been grossly exaggerated I am in favor of the use of raw milk in some instances

Dr Harry Lowenburg, Philadelphia I have used boiled milk for the last three years I have even used it in combination with the old-fashioned flour ball, and I can testify to the correctness of the statement that simple boiling will make the curds disappear from the stools in most instances In some it does not Then the addition of the pulverized flour ball and, perhaps, a few grains of pancreatin will provide the needed assistance The only thing about which I might take issue with him is that occasionally scurvy does occur One almost hesitates to talk of scurvy because the classical symptoms are so clear it seems as though every one should know them Just the reverse is true Nearly all the infants are treated for rheumatism and the infantile and parental suffering resulting therefrom is pitiable and lamentable During the last two years while using boiled milk I saw two cases of scurvy develop Raw milk orange juice and mashed potatoes brought about a prompt subsidence of the symptoms Hence one should be on the lookout for the initial symptoms of this disease and immediately change to raw milk or institute antiscorbutic measures throughout the time the infant is receiving boiled milk I want to congratulate the doctor on the fact that he has had the courage to state that the coagulable protein of cow's milk is still to be considered as a factor in the development of dyspepsia in infants The Germans teach us to feed protein in almost incalculable quantities and that all, or nearly all, alimentary disturbances of the suckling depend on relatively high fat and high sugar percentages While true in many instances my own experience does not permit me to regard the curd of cow's milk as a negligible etiologic factor in the dyspepsias of infants

Dr F N Rogers Manchester, N H I have never noticed any great prejudice toward the use of boiled milk I have always felt that there was a great deal of difference of opinion as to the way these babies should be treated I have not taken the initiative in trying new methods of feeding babies I take the work done before me and follow it out Results are what we are looking for I thoroughly believe that boiled milk is preferable and to be desired in a certain class of cases I prefer certified milk Such milk, with constant icing until the time it reaches the baby, has always produced good results with otherwise healthy babies I have had this thought for several years—that perhaps some babies are unable to take raw milk—they may have a peculiar sensitization for albumin in milk, and perhaps that albumin is absorbed I think there is danger of anchoring ourselves to any one method of infant feeding I want to report one case This baby, 3 months old, had been fed on raw milk He had lost weight When I saw the baby it had been kept for a week preceding on a mixture of malt food of some kind Its extremities were cold its vitality was low, it was undoubtedly in a starved condition I started in with a raw milk mixture which did not agree with the baby, then I used boiled milk with an alkali and the baby did well I felt that the using of boiled milk as well as evaporated cream was a great help in certain cases

Dr J H Hess, Chicago There has always been some prejudice about feeding with boiled milk My own treatment has been improved by the addition of fruit juices and soup I find that babies seem to want more boiled milk, and so I find myself in constant danger of overfeeding Some babies can be fed anything and I suppose this is true as regards quantity also These babies often stand more by giving a little cod-liver oil There is very marked improvement on boiled milk with the addition of cod-liver oil One other point—the question of infection It is true that in the hospital where babies are fed raw milk you will find one class of intestinal infection In the hospital where babies are fed on boiled milk you will find much less infection We have had no gas bacillus infection in our wards in two years I used to take my vacations in the winter, spring and fall Since I have been feeding boiled milk I take them in the summer

Dr L R DeBuys New Orleans I used to use raw milk, then pasteurized milk and now I use boiled milk But I believe we must first have good milk I instruct my clinic patients to boil the milk, not for the day but just before the mixture is made each time, so that if the iceboxes are at fault or if any changes have taken place in the milk, boiling will cause curdling of the milk which will show that it is unfit Raw milk is more apt to sour and boiled milk to rot Another point I have long been teaching is that as soon as boiled milk is given so soon must orange juice be included in the daily diet

Dr J H M Knox Jr, Baltimore It would be a great pity if the end-result of this would be that we would take less care to get good milk because of boiling it We must take just as great care to have pure milk as though we were giving it raw In Baltimore the milk that is sold in the homes in warm weather contains anywhere from 2 000 000 to 10,000,000 bacteria If it is not kept on ice it is dangerous unless it is boiled In some parts of the country there has been an increase in scorbutus following the general use of boiled milk That is something we should be on the lookout for If we give orange juice in conjunction with the boiled milk it will obviate this phase

Dr C J Hastings, Toronto, Ont I would like to emphasize what Dr Knox said in regard to officers of the bureau of health insisting on having a high grade milk I am officer of health in Toronto, and there we do not permit any milk to be sold that has not come up to the standard of certified milk and it must be shown to be clean and free from contamination All milk that is not up to the standard is required to be pasteurized Pasteurization plants are inspected regularly Bacterial count is taken before and after pasteurization, the temperature of the milk at the time of pasteurization and the period at which it is kept at that temperature is reported We are having self registering thermometers put in the plants of which we carry the keys and therefore we know whether that milk is being prepared according to requirements I think the element of danger of scurvy from boiled milk is remote—not to be considered with the possibility of transmission of communicable diseases Those of us who have made a study of the milk problem are aware that outbreaks and epidemics have been traced directly to raw milk From 25 to 26 per cent of tuberculosis in children under 16 years of age is of bovine origin There is no doubt as to the extreme importance of pasteurization of milk before feeding to children

Dr C. G Kerley, New York Sweeping statements regarding milk are not particularly wise. Milk has to be used at different seasons of the year by people living under widely different conditions, and, further, milk may vary greatly not only in its nutritional content but as concerns its cleanliness Whether milk should be used cooked, boiled, pasteurized or raw depends on the conditions just referred to Personally, I prefer raw milk if I can have it right and if it can be kept under proper conditions of cleanliness and temperature This, of course, means that a comparatively small part of the human baby family will be able to get raw milk I believe, however, that for well babies it is the best artificial food that can be given When safe raw milk cannot be secured then I believe it should be boiled, regardless of who uses it, when or where Further, I prefer cooked milk or milk that has been subjected to the influences of heat in all difficult feeding cases Cooked milk is more readily digested in young babies than raw milk and milk cooked with starch furnishes a suitable food for delicate infants I use this or the evaporated milk also cooked with a starch in a vast majority of my difficult feeders I believe that cow's milk casein may be an important disturbing factor in the feeding of young infants Scurvy is practically the only thing we can bring up against cooked milk, and the administration of orange juice will take care of this All my patients on cooked or evaporated milk are given orange juice

Dr Joseph Brennemann Chicago Dr Kerley said sweeping statements were not a good thing I do not believe that he referred to me for I have not made any sweeping statements I think bacteriologically boiled milk is safer As far as raw milk is concerned there is a physiologic difference One is more easily digested than the other Dr Kerley said exactly the same thing when he says that he feeds dyspeptic babies boiled milk I have been extremely conservative in my statements Some years ago I published an article about the relationship of raw milk to hard curds of infants' stools, and later a paper on the difference between the curds formed in the stomach with raw milk and with boiled milk I said at this time that I was not offering any suggestion as to whether boiled or raw milk should be used as a routine I did not want any one to think that just because I found that raw milk caused "hard curds" or made larger curds in the stomach that therefore I advocated the use of boiled milk, as one reviewer said I did I wanted to observe the clinical difference between raw and boiled milk for years before I committed myself, for the ultimate test is the baby, not the apparent difference in the two milks, physiologically I have waited six or seven years before expressing myself publicly even as mildly as I have today I want that impression to remain I am really not advocating boiled milk today I simply say there are differences that I have tried to point out and those differences make me use boiled milk at the present time for physiologic as well as bacteriologic reasons

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Bretonneau and Diphtheria—In 1821, Bretonneau began to study epidemic diphtheria in his locality, and for some thirty-five years or more, after the fashion of Sydenham, he followed the course of this disease of which he knew more than any other man in his time He became a sort of specialist in diphtheria, and his great monograph of 1826 is one of the classics of medicine He introduced the generic term *diphtherite'* as including all the diseases variously described as ulcera Syriaca, ulcera Aegyptiaca, synanche trachealis, croup malignant angina angina suffocativa, etc, elucidated its pathology at the bedside and in postmortem, insisted on its specific contagious character, differentiated it from the scarlatinal, stridular buffy and other anginas showed the insidious character of the nasal invasion, showed *how the* false membrane can be simulated in animals by the eschars from strong acids or by the local inflammation produced experimentally by cantharides or similar insects, described the cutaneous and vulvar forms, and on July 1, 1825, performed the first successful tracheotomy in diphtheria, after five failures His monograph concludes with historical extracts from all the older authors known to him, including Samuel Bard— Armand Trousseau A Master Clinician' *by* Fielding H Garrison, M D

THE USE OF MALT SOUP EXTRACT IN INFANT FEEDING*

B RAYMOND HOOBLER, AM, MD
DETROIT

The use of malt soup in the dietary of infants dates back over fifty years to the days of von Liebig, who proposed it as a food for healthy infants who for any reason were deprived of their mother s milk

About ten years ago A Keller modified von Liebig's formula in such a manner as to make it a suitable food for infants suffering from intestinal disorders The original von Liebig's formula has been abandoned because of its difficulty in preparation, and we follow today the method of preparation as outlined by Keller The various malt soup extracts which are put on the market all carry with them directions for preparing the malt soup according to Keller

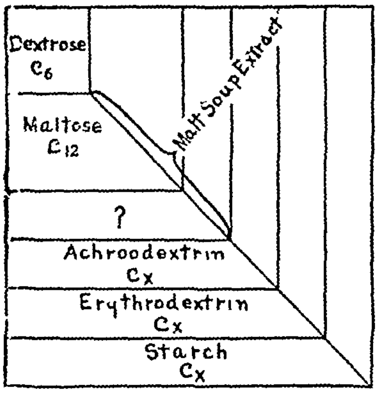

Chart 1 —Starch molecule and its products (after Stolte)

To follow only this one method of preparation limits to too great an extent a food capable of being used in many other ways, and the purpose of this paper is to discuss other methods of using malt soup extract in the nutrition of infants suffering from conditions other than diarrheal diseases for which malt soup was primarily intended Indeed, if I mistake not, malt soup is more frequently used today for the treatment of constipation in infants than for the cure of "enteritis," for which it was specifically devised This seems paradoxical, and accounts for the confusion of opinions and for the very disastrous results obtained in certain cases

It seems to me, therefore, that in order to clear the field of confusion and to save such an excellent food product from being wrongly used, there should be a variety of methods devised for its use, depending on the results one wishes to accomplish It is evident that any food made up according to one specific invariable rule is certain sooner or later to prove unsatisfactory in many cases

Following is the formula usually printed on the container of one malt soup extract

Directions for preparing Malt Soup

Make two mixtures as follows

Mixture 1 Take 3½ ounces by weight (or 2½ ounces by measure) of malt soup extract and dissolve in 22 ounces of warm water

Mixture 2 Take 1¾ ounces by weight (or 2¾ ounces by measure) of wheat flour, mix with 11 ounces of milk and strain through a clean sieve

Add Mixture 2 to Mixture 1 and boil three minutes, stirring constantly Cool quickly and pour into clean bottles holding 6 ounces Plug them tightly with absorbent cotton or if corks are used they should be absolutely clean and close fitting

Keep in a cool place

We have in malt soup a mixture of boiled whole milk, raw wheat starch, malt soup extract, water and an alkali in the form of potassium carbonate We are asked to use this food designed by Keller for the treatment of enteritis cases in other conditions without varying the formula It is only natural that there should be many failures, the failures, however, should not be wholly charged to malt soup extract, but should in my opinion be charged to the method of preparation

It seems to me that von Liebig's original use of malt soup for the nutrition of normal infants, particularly those infants whose weight is at a standstill and whose bowels tend to be constipated, offers a much greater field for the use of this excellent food product When used in such cases, it has been my custom to vary the Keller formula for the following reasons

1 Boiled milk to my mind should not be given over long periods of time to children with a tendency to constipation

2 Raw starch, or any starch cooked from only three to five minutes, should not be given to any infant, as it causes marked indigestion in many cases

3 I do not think the proportion of one-third whole milk and two-thirds cereal water is the correct proportion in every case in which malt soup extract is indicated

4 The use of the full quantity (3½ ounces by weight to 1 quart) of malt soup extract is too arbitrary a quantity This amount will often cause an infant to have too many watery stools, producing marked fall in weight due to water loss

5 The use of the alkali (potassium carbonate) is to my mind far more indicated in a formula designed for the correction of constipation than for diarrhea, since it has been shown by Dr Holt that loose stools contain a larger proportion of potassium and sodium than constipated stools, hence in attempting to change a hard formed constipated stool to a soft loose stool, the use of potassium and sodium in the food are indicated From the fact that in loose stools there is a much lower proportion of calcium than in constipated stools, it would seem on theoretical grounds that when one desired to use malt soup extract in conditions in which there are loose stools, the use of calcium would be more indicated than the alkali potassium or sodium However, the presence of the alkali potassium is theoretically the proper form of the alkali in conditions in which stools tend toward constipation, and this is confirmed by clinical observation

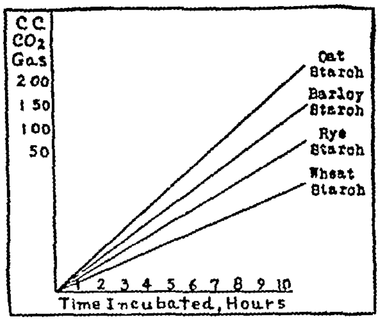

Chart 2 —Gas production from cereal waters (after Klotz)

The method of using the malt soup extract which has been most satisfactory in my experience is one which gives much greater flexibility in the use of the various ingredients than can be obtained in following Keller's formula This may be accomplished by adding the malt soup extract to a well cooked cereal water, and this mixture added to raw milk in such proportions as one wishes

To reduce to a rule

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* Read before the Section on Diseases of Children at the Sixty Seventh Annual Session of the American Medical Association Detroit June, 1916

1 Make up 1 quart of cereal water, using such quantity and kind of cereal flour as may be indicated (The cereal water is to be cooked at least one hour in a double boiler) When sufficiently cooked, and while still hot, add 2 level tablespoonfuls of malt soup extract Stir until dissolved Strain

2 Select the kind of milk which it is desired to feed, and measure off the number of ounces of the milk which are to be fed during the twenty-four hours (This will vary according to the age, weight and condition of the infant) Add to the milk as much of the cereal-malt soup extract as is required to make up the quantity to be fed in twenty-four hours Add to this such amount and kind of sugar as may be indicated

This formula serves for the first two or three days, and is in the form of a trial formula If the child retains it and the stools become more frequent and softer, and there is a gain in weight, this formula may be continued If the child retains it and there is no change in stools or weight then gradually increase the malt soup extract With each increase of malt soup extract one should withdraw an equal amount of the added sugar, provided one is near the carbohydrate limit, which of course varies in different children By using this method of preparation one is at liberty to vary the amount and kind of cereal water used The use of so much wheat flour cooked for such a short time is in my opinion responsible for many failures in the use of malt soup The wheat flour was added in the original formula of Keller for its constipating effect, as it was found that when malt soup extract was used alone it was too laxative In the choice of the cereal flour used in connection with malt soup extract, one should be guided by the effect which it is desired to produce If a marked laxative effect, then one type, if a constipating effect, then another, if intermediate, then still another group

Dr Stolte, associated with Professor Czerny, explains this difference in the action of the various starches in this manner

Starch, as it undergoes hydrolysis, releases at each step in the process some of its sugar in the form of dextrose C_x starch plus hydrolysis equals erythrodextrin plus C_6 sugar C_x erythrodextrin plus hydrolysis equals achroodextrin plus C_6 sugar C_x achroodextrin plus hydrolysis equals C_{12} maltose plus C_6 sugar C_{12} maltose plus hydrolysis equals C_6 sugar plus C_6 sugar This is represented diagrammatically in Chart 1

The starch granules of the various cereals do not all hydrolyze with the same rapidity, hence some of them release the C_6 sugar more quickly than others As soon as the dextrose is released, it is subject to attack by the intestinal flora and undergoes fermentation The products of this fermentation, acting on the intestinal mucosa, cause an increase in peristalsis If sugars are released rapidly, then there is active fermentation accompanied by active peristalsis, and this active peristalsis results in increased number of stools Therefore any cereal that releases its sugars rapidly has a laxative action

It has been known empirically for many years that oatmeal was a laxative cereal Klotz has shown that oatmeal yields its sugars more rapidly for fermentation I have introduced his original chart to which I have added my own observations regarding barley, rye and wheat (Chart 2)

TABLE 1—FERMENTABILITY

	Acidity after 12 Hours
Malt solution alone	7 7
Malt solution plus wheat flour	7 4
Malt solution plus oatmeal flour	11 5

Klotz also studied the fermentability of malt solution alone and with wheat and oatmeal flour, using the amount of acidity produced as an index of fermentation, with the results indicated in Table 1

According to these findings, if one desired a markedly laxative mixture, one would use malt soup extract in a cereal water made from oatmeal flour If one wished a mildly laxative mixture, malt soup extract with a cereal water made from wheat flour would be indicated This is no doubt perfectly true when the fermentation is carried on by means of yeast, but it does not always follow when we deal with the intestinal flora of individual infants

TABLE 2—TYPES OF STOOLS

Kind of Cereal	Yeast	Feces of M B Mucus $\bar{c}$ Curds Gram Positive	Feces of C C Mucus $\bar{c}$ Curds Gram Negative	Feces of M J Mucus $\bar{c}$ Blood Gram Negative	Feces of M J after One Week Albumin Milk Treatment Gram Negative		Feces of H M Normal Stool Gram Negative Flora		Normal Stool $\bar{c}$ Pancreatic Ferment Added	
					Gas	Acidity	Gas	Acidity	Gas	Acidity
Dextrinized wheat flour	++	+	+	+	+	10	+	24	+	22
Barley flour	+	++	++	++++	+	16	+++	26	+	24
Oat flour	+++	+	+++	++	+	10	++	18	++	14
Corn flour	++	+++	++	+++	++	8	+++	10	+++	22
Rice flour	++	++	++++	++	+	10	++	16	++	16
Whole wheat flour	+++	+++	++	+++	+++	8	++++	14	++	22
Dextrimaltose	++	+	++++	++	++	6	+	20	++	22
Sucrose	++++	+++	++	++	++++	6	+	12	++	15
Malt soup extract	+++	++	++	++	+	4	+++	24	+++	24

I present a few type cases taken from many observations made at the Children s Free Hospital, indicating that not all children handle the various starches in the same manner It seems probable that the difference is due to the bacterial flora Details of the observations were as follows On admission a stool was collected in a sterile oiled silk napkin A portion was weighed and an emulsion was mixed with sterile distilled water in definite proportions

The various cereals used in the hospital were made up in 1 per cent solutions, each cooked for two hours, strained, and 10 c c put in sterile fermentation tubes These tubes were kept in the refrigerator until ready for use Each tube was inoculated with 1 c.c of an emulsion of feces in sterile distilled water At the end of twenty-four hours the amount of gas formed in the tubes was read and the relative amount present indicated by the number of crosses after the different cereals The acidity was also taken and measured in terms of cubic centimeters of tenth normal sodium hydroxid per hundred c c cereal solution Several cases representing various types of stools are given in Table 2

It will be observed that no regularity can be noted in the action of the various starches when fermented with the bacteria contained in the feces of individual cases

In the case of M J during an acute diarrhea all the starches were vigorously attacked by the intestinal flora After having been fed on albumin milk for one week the stools became smooth, yellow and pasty There was then much less activity on the part of the intestinal flora in attacking the starches

In two different cases with stools as nearly alike in appearance as one could choose (M J and H M) there was much more gas and acid produced in one than the other, although nearly identical starches were chosen

It seems evident, therefore, that the manner in which an infant will handle a starch solution depends in a great measure on its intestinal flora It may do badly on one kind of starch and well on another In the light of these researches it would seem that we should choose the type of cereal water given with malt soup extract as carefully as we should choose any other ingredient of an infant's formula, and in general this may only be determined by trial

SUMMARY

In following the method suggested above, we have a perfectly flexible formula

1 We may diminish or increase the milk

2 We may use it boiled, pasteurized or raw, as we choose

3 We may select the kind of cereal water used, and may increase or diminish its strength at will

4 We may increase or diminish the amount of malt soup extract used, enabling one to start in with a small quantity and gradually increase it if it agrees

5 We may add other sugars in amounts sufficient to meet the needs of any case, and withdraw them as malt soup extract is increased

David Whitney Building

REST OF THE INDIVIDUAL LUNG BY POSTURE*

GERALD B WEBB MD,
ALEXIUS M FORSTER, MD
AND
F M HOUCK, MD
COLORADO SPRINGS, COLO

Respiration in a normal person takes place upward of 30,000 times in twenty-four hours

When a tuberculous patient rests on one side at night, the dependent lung is restrained in motion, but the upper lung opens and closes about 12,000 times in ten hours of sleep

We have noticed a marked tendency for the consumptive to lie on the side of the better lung at night, as the following figures testify It therefore often happens that the very lung which needs the most rest is getting the most work

Twenty-eight patients had a greatly involved left lung with an almost normal right lung, of these, 17 slept on the right side none on the left, eight on either side, and 3 on the back

Thirty patients had a greatly involved right lung with an almost normal left lung, of these, 13 slept on the left side, 7 on the right, 8 on either side, and 2 on the back

Twenty-four patients had a slightly involved left lung and an almost or quite normal right lung, of these, 11 slept on the right side, 4 on the left, 6 on either side, and 3 on the back

Forty-one patients had a slightly involved right lung and an almost or quite normal left lung, of these, 7 slept on the left side, 10 on the right, 15 on either side, and 9 on the back

Thirty-three patients had about the same amount of tuberculosis in each lung, of these, 4 slept on the left side 16 on the right, 12 on either side, and 1 on the back

It would seem that a majority of normal persons sleep on their right sides, yet there are certain factors which may determine otherwise

A nasal obstruction, the turning the eyes away from the light and other factors may have an influence on the position taken during sleep

It was pointed out by Walsh[1] that in pulmonary tuberculosis the disease would seem to begin in most patients at the right apex Later possibly the left apex would show evidence of disease, and the further spread of tubercles would be to the left base We have ourselves noted that we have had more patients needing pneumothorax with extensive left sided than with extensive right sided tuberculosis

The life history of the tubercle bacillus demands access to and egress from the host It would possibly seem rational to imagine that in the tubercle bacillus making the human race meet its needs, the disease would become more widespread in the more exercised lung The fact that the majority of persons are apt to sleep on their right sides and the fact that a majority of advanced tuberculous lesions are to be found in the left lungs may not prove to be entirely coincidental

The experiences noted from successful artificial pneumothorax convincingly show the great value of rest of the tuberculous lung

Rubel[2] has shown in rabbits injected intravenously with bovine tubercle bacilli that in an immobilized lung the tuberculous process becomes a chronic type, whereas in the freely moving lung the disease is of a rapidly progressive type It would seem rational, therefore, to advise patients to lie on the side of the more diseased lung at night and also to rest in this position as much as possible in the day time We have noted that in general those patients who have unconsciously done this would seem to present more quiescent lesions

About fifteen years ago one of us advised this position of sleep and rest to a patient with advanced right sided lesions who today is in excellent general health

In many patients, on account of the cough produced by such posture, we have allowed rest for a short time on the sound side in order to procure drainage, and then we have trained them very gradually to rest on the side containing the actively diseased lung

During the past year we have applied this principle in a large number of cases, and in addition have placed under the dependent side a small firm pillow to restrain the motion of this lung to a greater degree Some patients so treated have been able to remain lying on the side of the diseased lung over twenty hours a day for months at a time with little discomfort The results have been encouraging, and we feel we have observed in certain cases a cessation of fever, a diminution of expectoration, and lessened liability to relapses

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* Read at the twelfth annual meeting of the National Association for the Study and Prevention of Tuberculosis

[1] Walsh Tr Fifth Annual Meeting Natl Assn Study and Prev Tuberc

[2] Rubel in Fishberg Pulmonary Tuberculosis

In the normal person there is probably little if any hyperemia of the dependent lung during sleep In a tuberculous patient, however, a moderate degree of hyperemia is undoubtedly produced by prolonged rest on the affected side We would seem to have confirmation of this probability in several patients who have found hemorrhages to occur over a period of years whenever they have slept on the side of their diseased lung

It would seem wise in future to observe all patients with nocturnal or early morning hemorrhages from the point of view of the side on which they have rested at night

In certain patients with heart lesions the rarity of pulmonary tuberculosis has been thought to be due to a possible back pressure of the blood in the pulmonary circulation

Fagge[3] found only four cases of pulmonary tuberculosis with mitral stenosis in thirty years' records of postmortems at Guy's Hospital

In searching the literature in regard to the above mentioned simple procedure little can be found

Mendelsohn[4] advocated patients with pulmonary tuberculosis lying on the side of the healthy lung so that the discharge assisted by gravity could more easily flow to the bronchus and so be thrown off

Link[5] in 1902 suggested tuberculous patients resting for a few hours during the day on the side of the tuberculous lung, but from his article it would seem did not thoroughly carry out the suggestion

Link, however, calls attention to the possibility of hyperemia and also of the added rest of the affected lung by adopting such a procedure Link observed the diminished respiratory murmur of the dependent lung[6]

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[3] Fagge in Fishberg Pulmonary Tuberculosis

[4] Mendelsohn Ueber therapie Beeinflussung der Expektorationen durch Heilmittel der Hypurgie Berl Klin 1899

[5] Link Lagerung der Kranken bein einseitiger Spitzentuberkulose Ztschr f Tuberk iii 480

[6] The following references may also be consulted
Rubel Funktionelle Ruhe der Lungen, etc Ztschr f Tuberkulose x 193 319
Gerhardt Die Lage der Kranken als Heilmittel Ztschr f Kranken pflege 1898 p 88
Galliard Les Pleuresies providentielles Sem med, 1897 p 214
Von Leyden Der Comfoit der Kranken als Heilfaktor Ztschr f Krankenpflege 1898 xx
Reusner Die Expectoration bei allein erhaltener Zwerchfellathmung St Petersb med Wchnschr 1898 No 2

Charcoal in Local Treatment of Gonorrhea—An abstract in the *Corrcspondenz-Blatt* says that Oppenheim and Schlifka of Vienna report excellent results from injection into the urethra once a day, of a suspension of 5 gm of animal charcoal in 0 5 liter (quart) of tepid water Acute gonorrhea, suppurating profusely with numerous gonococci, was permanently cured by this alone, but the cure could be hastened by combining it with an astringent (1 6,000 potassium permanganate) The procedure proved most promptly effectual in acute posterior urethritis with diffusely purulent turbid urine They said that this charcoal lavage does not irritate or harm in any way

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TUMORS OF THE THIRD AND FOURTH VENTRICLES[*]

PETER BASSOE, MD

CHICAGO

I TUMORS OF THE THIRD VENTRICLE

In 1910 T H Weisenburg,[1] on the basis of thirty reported cases with necropsy, succeeded in bringing out the salient features of tumors arising within the third ventricle and thus establishing a syndrome which necessarily is ill defined, as the symptoms are either due to pressure on neighboring structures or to secondary hydrocephalus Among the former symptoms are paralysis of the associated ocular movements, exophthalmos, large pupils with impaired reaction, and ataxia of the cerebellar type Of the few cases reported later, one by Lewis J Pollock[2] may be mentioned, as the appearance of the tumor on cross section of the brain closely resembles that of the one to be related here

Case 1—*Boy, 14 years old, with rather precocious genital and hairy development suggesting hyperpinealism Limitation of ocular movements Papillitis and blindness Ataxia Headache, drowsiness, mental dulness Soft glioma filling third ventricle, secondary hydrocephalus*

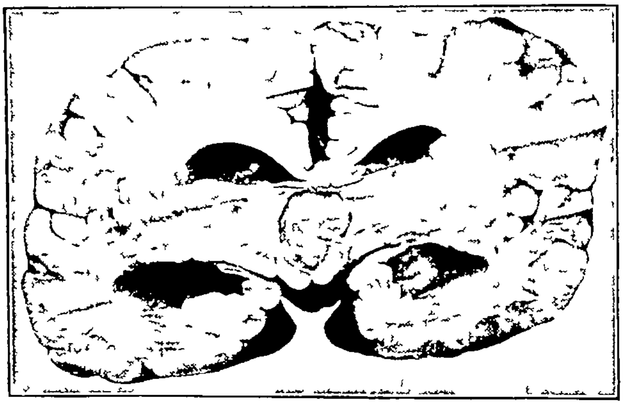

Fig 1 (Case 1)—Tumor filling third ventricle

A boy 14 years old was admitted to the surgical service of Dr Carl B Davis in the Presbyterian Hospital, Aug 24, 1915, having been referred to him by Dr J C Bucher of Verona, Ill The parents and two brothers and sisters are in good health The patient had previously been healthy and had done well in school He had been of a solitary and shut-in disposition and had used tobacco to excess for four or five years Two months before admittance he had daily headache for a week or ten days, then it subsided and he had not complained of it for a month before coming to the hospital Two weeks before admittance he suddenly became blind, and a few days later he had an epileptiform attack From the time of the onset of headache he gradually grew dull mentally

Examination by the writer on the day of admission Well developed boy with healthy, ruddy complexion The head is rather large, the circumference being 58 5 cm He has a very distinct mustache for his age, also abundant pubic hair He is dull, drowsy and apathetic and cannot give a reliable account of his previous history The pupils are equal, wide and do not react to light or in accommodation When at rest the eyeballs diverge a little There is apparently no light perception The movements of the eyeballs, especially the left one, are much limited The left eye is only moved 15 degrees outward, the right one twice as much Marked bilateral choked disk with hemorrhages Corneal reflexes present He lies on his back with head turned to the left and holds the neck stiff Any movement of the head, especially to the right, is resisted and seems to cause headache The gait is very unsteady and he has a tendency to fall backward Ataxia of the extremities is demonstrated by the finger to nose and heel to knee tests Examination of sensation is unsatisfactory, but apparently there is some diminution of pain sense on the left side of the face The facial muscles appear somewhat weak on both sides, and the greatest weakness is found in the shutting of the left eye The watch is heard in both ears Knee jerks are absent, left ankle jerk absent, right present Abdominal and cremasteric reflexes present Wrist and elbow jerks present No Babinski sign The genitalia are very well developed

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[*] Read before the Section on Nervous and Mental Diseases at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

[1] Weisenburg T H Brain 1910 xxxiii 236

[2] Pollock Lewis J Tumor of the Third Ventricle The Journal A M A June 5 1915 p 1903

Blood examination Hemoglobin, 82 per cent , red cells, 6,000,000, white cells, 15 900

Urine Normal except for excess of phosphates The Wassermann test is negative with blood and spinal fluid, and the latter shows no increase in cells or globulin and gives a negative Lange colloidal gold test

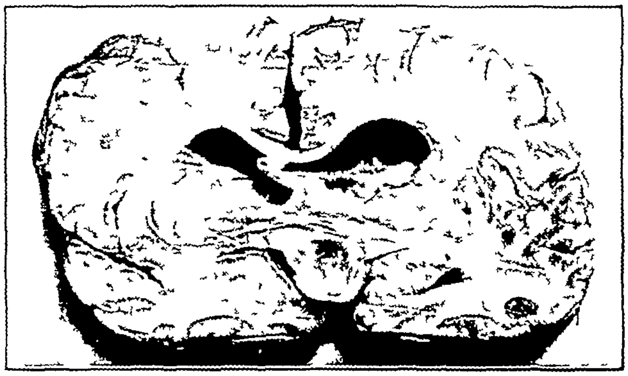

Fig 2 (Case 1) —Anterior portion of tumor

August 27, ophthalmoscopic examination by Dr C G Darling shows a swelling of 8 diopters in the right eye and 4 or 5 in the left eye

August 30 Getting worse mentally, seems disoriented, soils bed, has vomited his breakfast a few times, little headache, always tendency to fall backward

A diagnosis of brain tumor was made, most likely located in the region of the corpora quadrigemina or pineal body, although the possibility of a cerebellar site could not be excluded However, only a decompression operation was advised

August 31 Right subtemporal decompression was made by Dr Davis The brain was found to be under unusually high pressure The temperature, which previously had not exceeded 99 F, rose to 102 4 six hours after the operation, and reached 104 8 before death, which occurred thirty hours after the operation

Necropsy—The brain weighs 1,450 gm The sulci are shallow and the gyri flattened On the right side is a bulging area corresponding to the recent decompression operation On the inferior surface there is a marked downward bulging in the region of the pineal body The latter structure, however, is of normal appearance After hardening in liquor formaldehydi the brain was cut by means of frontal sections The bulging referred to is found to be caused by the great distention of the lateral ventricles A soft, light gray tumor is found to fill the third ventricle (Fig 1) Posteriorly it lies free in the ventricle, plugging the opening of the aqueduct, and appears to have a slight capsule Its upper surface bulges into and completely closes the foramina of Monro (Fig 2) In front of this level the tumor is seen to extend in a downward direction in front of the infundibulum, the anterior end being 9 mm in front of the anterior border of the optic chiasma The bulging at the base produced by this forward growth of the tumor begins at about the center of the base of the infundibulum and extends 2 3 cm forward, or 1 1 cm in front of the chiasma The greatest anteroposterior measurement of the tumor in the third ventricle is 4 7 cm Transversely it measures 1 9 cm and vertically 2 1 cm The degree of hydrocephalus may be judged from Figure 3, showing the anterior portion of the lateral ventricles

Histologic Examination—This tumor is very edematous, loose in texture and in most places shows considerable evidence of tissue degeneration Small hemorrhagic areas are seen The cells are very variable in size and shape, and only in a few places is there any significant arrangement of them

Many of the cells have the appearance of astrocytes, and very abundant fine fibers are seen in Van Giesen specimens Their appearance suggests glia, but the Weigert glia stain failed, probably on account of the tissue degeneration On the border of the tumor tissue remains of the ependymal layer of cells may be seen, in the form of palisade-like columns (Fig 4)

II TUMORS OF THE FOURTH VENTRICLE

Tumors of the fourth ventricle are much more common than those of the third ventricle They also produce symptoms by inducing hydrocephalus and by exerting pressure on neighboring structures, in this case the cerebellum, pons and medulla Like all other posterior fossa tumors, they may produce stiffness of the neck and occipital pain, and as increase in cells and globulin as well as in the pressure of the spinal fluid is common, a clinical resemblance to meningitis sometimes exists This is well shown in our Case 2, while Case 3 presented the picture of cerebellar tumor, and in Cases 4 and 5 mental symptoms predominated In another case reported by the writer[3] in which, in addition to the fourth ventricle tumor, another ependymal glioma in the frontal lobes was present, mental symptoms entirely dominated the clinical picture Sudden death is very frequent in these cases

Case 2—*Early symptoms suggestive of meningitis Cloudy spinal fluid with increase in cells, both polymorphonuclear and mononuclear Papillitis Duration five and one-half months Sudden death Very large tumor in fourth ventricle, breaking through and almost surrounding pons*

A boy 2½ years old, formerly well, was seen with Dr H F Helmholz at the Evanston Hospital, Feb 15, 1914 Ten weeks previously he had been taken ill with vomiting which occurred every day There was slight fever, the temperature occasionally reaching 101 F The child seemed to suffer from headache Strabismus and nystagmus had been noted, but there were no convulsions

Blood examination, February 12 Hemoglobin, 75 per cent , reds, 5,000,000, white cells, 15,000

Examination—Slight bilateral papillitis, no Kernig sign, no rigidity, knee and ankle jerks weak, abdominal reflexes weak left weaker than right, doubtful left Babinski sign The child was fairly bright and good natured On making lumbar puncture the fluid was cloudy and escaped in a stream There were 363 cells per cubic millimeter, about two thirds of which were polymorphonuclear No bacteria were found in smears or cultures As tuberculosis was suspected, a guinea-pig was inoculated but did not develop the disease

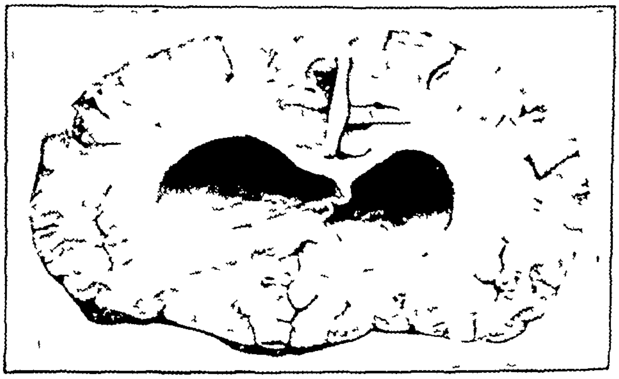

Fig 3 (Case 1) —Anterior portion of distended lateral ventricles

For further information regarding this case I am entirely indebted to Dr Helmholz and to Drs W O Hoffman and

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[3] Bassoe Peter Multiple Ependymal Glioma Arch Int Med September 1908 p 194

A B Schwartz, in whose article on the permanganate reduction index of the cerebrospinal fluid[4] this case appears as Case 1 February 17, slight rigidity of the neck appeared with suggestion of the Kernig sign on the left side There was a distinct Babinski sign on the left side, right plantar reflex normal February 18, spinal fluid still opalescent but pressure not increased The patient improved, and on February 24 he could stand up and walk when led by the hand The headache was less severe, and vomiting had ceased The spinal fluid was clear and showed a few lymphocytes, but no bacteria A "weakly positive" Wassermann reaction was obtained with the spinal fluid, and the Lange gold test on this and three subsequent occasions gave a weakly positive reaction of syphilitic type, which may be represented as follows 0 1 2 2 1 0 0 0 0 0 (maximum reaction would be 5) Mercurial treatment was now commenced and the patient continued to improve March 2, a weakly positive Wassermann test with the blood was obtained March 17, he walked well and had gained in weight Lange test negative in all dilutions No puncture was then made for a month, and by April 16 the headache had returned and marked ataxia had developed so he could not sit up in bed with the eyes closed There was some relief after lumbar puncture The Lange test was negative

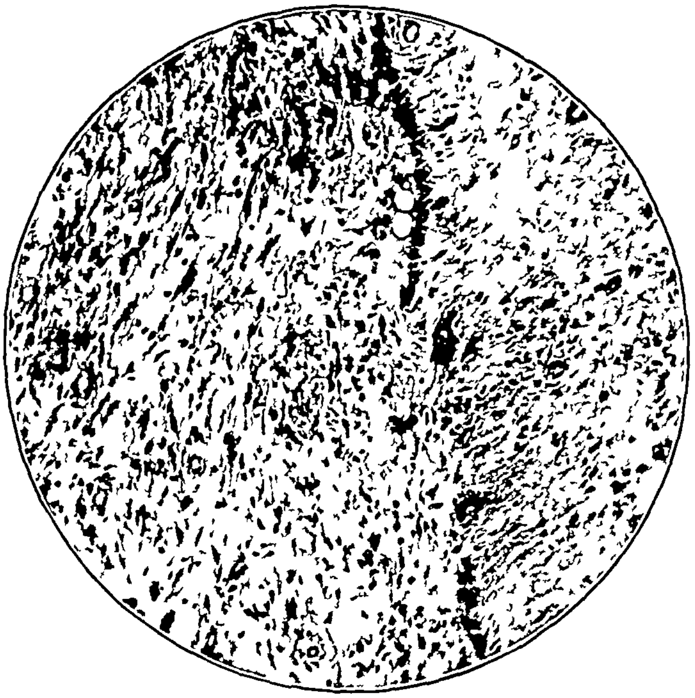

Fig 4 (Case 1) —Photomicrograph of tumor showing remains of ependymal layer

May 9 In spite of repeated lumbar punctures, the symptoms became more severe

May 25 Frequent vomiting Unable to sit up without swaying from side to side Mind clear Wassermann test with spinal fluid negative

June 9 Died quite suddenly without any special symptoms having developed

Necropsy—After hardening in liquor formaldehydi the brain weighs 1,385 gm The gyri are large and flattened, the sulci shallow The cerebellar lobes at the base are seen to be separated by a light gray tumor mass which extends forward and upward so as to nearly surround the pons, only a space 8 mm being left uncovered (Fig 5) The width of the tumor between the cerebellar lobes is 3 cm, and it extends 4 cm backward from the posterior border of the bulb Figure 6 shows how the tumor fills and enormously expands the fourth ventricle Hemorrhagic areas are seen in its substance The pons and bulb are greatly flattened The aqueduct is much dilated, the ventricles only moderately so The tumor deeply indents the cerebellum on both sides, more so on the right, but does not grow into this organ or into the pons or bulb

Histologic Examination—The tumor shows characteristic structure of glioma with typical rosette or fan-shaped arrangement of the cells about the vessels Fine glia fibers are demonstrable by the Weigert glia stain (Fig 7)

Case 3—*Clinical picture of cerebellar tumor Death on operating table after exposure of dura over cerebellum Small tumor in upper part of fourth ventricle Marked hydrocephalus*

A girl 5½ years old was examined Oct 8, 1912, in consultation with Dr W R Parkes of Evanston The child had been perfectly well up to the age of 4 years, when she had measles Two or three months later she began to stumble in walking and would usually turn the eyes to one side She had headache for a month at that time The legs gradually grew worse In November, 1911, a neurologist discovered optic neuritis, made a probable diagnosis of cerebellar tumor and advised operation, but his advice was disregarded After a fall, four days before my examination, she began to vomit and became semistuporous

Examination—The head is unusually large, but this is probably not significant, as the six healthy brothers and sisters also have large heads The patient is dull and drowsy, and does not at all cooperate in the examination The pupils are equal, of medium width, and react normally Bilateral papillitis of moderate degree, probably of long standing No nystagmus, no facial paralysis Ocular movements probably normal All tendon reflexes increased Both legs spastic, bilateral ankle clonus and Babinski sign The upper abdominal reflexes were equal and normal, the lower doubtful A diagnosis was made of tumor in the posterior fossa, probably cerebellar, and operation advised October 15, a suboccipital operation was performed by Dr Charles E Kahlke, but the patient died before the dura was opened

Through the courtesy of Dr W Henry Wilson, pathologist to Hahnemann Hospital, I later had an opportunity to examine the brain, which had been hardened in liquor formaldehydi and afterward weighed 820 gm The upper part of the fourth ventricle is filled by a grayish, smooth, rounded tumor, attached to the floor for a distance of 2 cm (Fig 8) Its width is 15 mm, height 7 mm Its inferior border is 2 cm above the end of the ventricle On making longitudinal section it appears as if the tumor at its upper end extends for at least 1 cm into the pons The brain shows very marked hydrocephalus (Fig 9)

Histologic Examination—The tumor is a glioma, rich in cells

Longitudinal sections of the pons beneath the tumor show that the latter extends well into the pons substance The border is diffuse Pal-Weigert specimens show no persistent nerve fibers in the portion of the tumor growing into the pons

A section of the upper part of the cervical cord, stained by the Pal-Weigert method, shows the posterior columns and the direct cerebellar tracts to be well preserved and deeply stained in comparison to the rest of the cord The pyramidal and Gowers' tracts are decidedly degenerated

Case 4—*Man of 58 years with symptoms of cardiovascular disease Mental deterioration, delusions of persecution and delirious episode during last months of his life Small sessile glioma in floor of fourth ventricle External and internal hydrocephalus*

A cab driver 58 years old was admitted to the service of Dr B W Sippy in the Presbyterian Hospital, Oct 5, 1906 He had been a hard working and temperate man He had acute articular rheumatism at 17 and at 30 years of age, and syphilis at 48 For several years he had occasionally had sudden momentary sensations that he was going to fall when walking a sensation of constriction around the chest, and shortness of breath on exertion There had been a general feeling of weakness for at least three years but no loss in weight, and the appetite had been good While in the hospital he was suspicious of other patients, even claiming that they had robbed him and tried to murder him His memory for recent events became greatly impaired He gradually grew irritable and excitable, and three weeks after admittance became delirious, had involuntary discharges, and had to be restrained After three days the delirium subsided and he returned to his previous mental state He also developed a pleuritic effusion in the hospital and at first there were both a systolic and a presystolic murmur at the apex with irregular rhythm, but later the presystolic murmur disappeared and the systolic one became very faint The eye grounds were examined twice and found to be normal The blood pressure at first was 190, later 104 The urine frequently contained albumin and hyaline and granular casts The hospital record is silent as to any symptoms and findings on the part of the nervous system other than those mentioned The patient died, Feb 8, 1907

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[4] Hoffman W O and Schwartz A B The Permanganate Reduction Index of Cerebrospinal Fluid Arch Int Med, February 1916 p 293

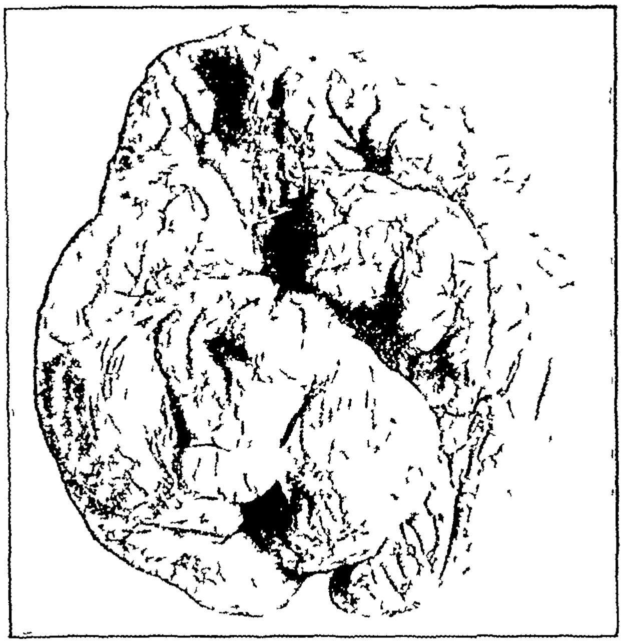
Fig 5 (Case 2) —Base of brain showing tumor nearly encircling pons

Necropsy—At the necropsy the following anatomic diagnosis was recorded arteriosclerosis, thrombosis of left iliac artery, retrograde thrombus formation in the aorta, edema of lungs, fibrinous pericarditis, hypertrophy of heart, chronic mitral and aortic endocarditis, hypertrophy of prostate and bladder, multiple rectal ulcers, tumor of fourth ventricle, external and internal hydrocephalus, atrophy of brain

On opening the fourth ventricle a growth was seen attached to its floor and extending into the lumen of the ventricle but not reaching its roof It was 1 5 cm long 1 7 cm wide, and 18 cm in height (Fig 10) The protocol described the brain as "soft and tense to bursting" There was a large amount of subdural fluid, and the pia-arachnoid was very edematous The ventricles were dilated

Histologic Examination—The tumor shows the structure of ependymal glioma, with some areas consisting mostly of fine fibers while in others cells predominate In the center of the tumor small areas of calcification, as well as hyaline concretions, are seen (Fig 11).

Case 5—*Man, aged 38 at death For several years attacks of headache, dizziness and vomiting Early relative weakness in left side Mild mental deterioration and symptoms of cardiac and renal disease Death from hypostatic pneumonia Sessile tumor in floor of fourth ventricle*[5]

A business man, married, 37 years old, was first seen by the writer, Nov 15, 1912 There was some suspicion of syphilis in the father No brothers or sisters No previous illnesses of importance Venereal disease denied

Present Illness—The onset was very gradual About five years before death (1909) he began having brief attacks of nausea and vertigo, later associated with headache of increasing severity, lasting in the beginning a few hours only, later several days From about June, 1911, more or less vertigo was experienced every day, worse in the mornings and after heavy meals, and especially when stooping Vomiting occurred with severe attacks of headache He began losing flesh in 1910, but when examined by Dr Portis in November, 1911, he still weighed 195 pounds, one year later, 152 pounds Dr Portis found gastric hyperacidity and low blood pressure, (96 to 108) In 1911 he began complaining of clumsiness and lack of control of the movements of the left hand and arm, especially annoying when shaving or driving his automobile A tendency to drag the left foot and to stagger to the left was also noted at this time When first seen by Dr Davis in March, 1912, physical examination was practically negative The Wassermann test with the blood was made several times, generally negative, once or twice "doubtful" Later in 1912 the weakness in the left side increased and he showed a suspicious overconfidence in his business ability In October of the same year he became involved in business failure and legal prosecution, and showed apparent rapid increase in mental deterioration which, however, possibly to some extent was simulated

Examination by the writer, Nov 15, 1912 Patient carries himself like an old man and talks slowly and feebly Memory probably somewhat impaired Decided relative weakness in left arm and leg, latter slightly atrophic Both knee and ankle jerks brisk, left more so Pulse 68 No other findings

Dec 8 1912, reexamined Looks better, has had headache every day, worse when sitting up Less difference in reflexes on right side and left side, but left leg appears weaker Blood pressure 100, pulse 64 Wassermann test with blood and spinal fluid negative The latter shows no increase in cells or globulin Lange colloidal gold test negative Ophthalmoscopic examination negative Attacks of severe headache, with vomiting, recurred frequently The patient was last seen by me in 1913 Dr Davis kindly informed me that he was under his continued observation from the fall of 1913 until his death in April, 1914 The weakness and atrophy of the left limbs increased The eye grounds remained normal, but headache, vomiting and dizziness remained prominent symptoms Albumin and casts appeared in the urine Repeated examinations of the spinal fluid showed nothing abnormal No sensory disturbance developed A few days before death he developed hypostatic pneumonia which determined the fatal issue

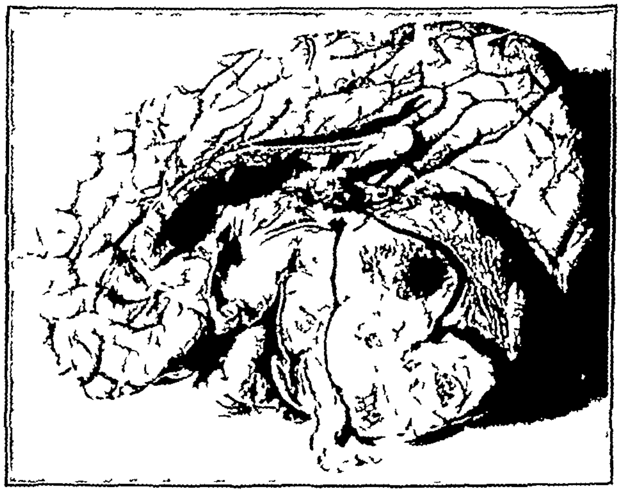
Fig 6 (Case 2) —Median section of brain showing tumor filling fourth ventricle

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[5] This patient was only under my observation for a period of a few months. For a large part of the clinical history I am indebted to Drs Achilles Davis and Milton Portis and for the necropsy notes and opportunity to examine the brain to Dr F Robert Zeit

Necropsy.—This was held by Dr F Robert Zeit, who kindly placed his notes and the gross and microscopic specimens at my disposal. The following anatomic diagnosis was made by Dr Zeit. Ependymal glioma of fourth ventricle. Internal hydrocephalus. Edema of brain. Chronic parenchymatous nephritis (large, red kidney). Hypertrophy of heart. Brown induration of lungs. Terminal hypostatic pneumonia. Healed tubercle in apex of left lung. Chronic granular gastritis and hemorrhagic acute duodenitis.

The specimen further examined by me consisted of the cerebellum, pons and medulla. The cerebellum had been opened from above so as to expose the fourth ventricle. This is greatly distended, and on the left side it forms a cavity occupying the greater part of the cerebellar hemisphere. To the left of the median line the ventricle is the seat of a sessile grayish-red growth measuring 3.3 cm in length, 3.5 cm transversely and projecting 8 mm into the ventricle (Fig 12). The cavity extends 2 cm to the left of the tumor margin and has a smooth lining. The cerebellar substance covering the dilated ventricle on the left side is only 3 to 5 mm in thickness. The under surface of the cerebellum shows marked molding at the edge of the foramen magnum.

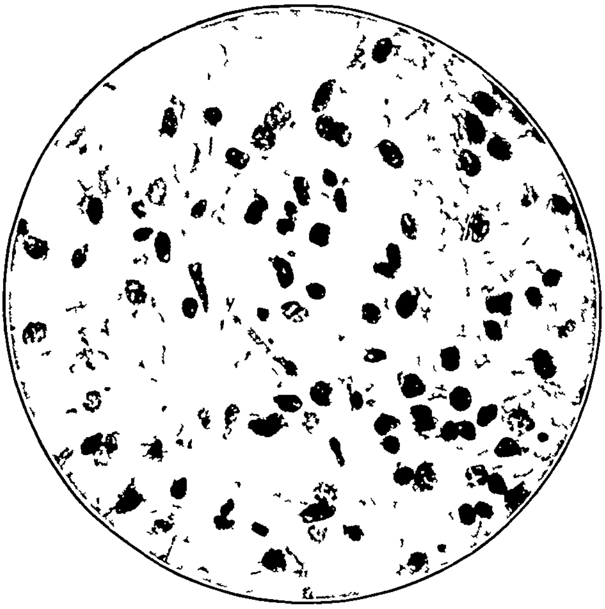

Fig 7 (Case 2).—Photomicrograph showing glia fibers and cells

The other gross findings are summarized in the anatomic diagnosis. It was particularly noted that nothing suggestive of a syphilitic lesion was found in the body that there was very little sclerosis of the aorta, and that the vessels at the base of the brain had soft and thin walls. The skull and dura showed no changes. The convolutions of the brain were flattened, and the lateral and third ventricles were considerably dilated. Each kidney weighed 230 gm, and the capsules were adherent. The heart weighed 330 gm.

Histologic Examination.—The structure is that of a somewhat degenerated ependymal glioma. Numerous hyaline concretions are seen (Fig 13), mostly derived from obliterated vessels.

A Pal-Weigert specimen of the bulb shows considerable degeneration of the dorsal portion of the pyramids adjoining the olives, while their ventral (superficial) portions are well preserved. Still more marked degeneration is found in the raphe and in the interolivary fibers. This portion of the bulb is seen in hematoxylin-eosin and Van Gieson preparations to be thickly set with pale blue, hyaline, round bodies.

Case 6.—*Boy 5 years old. Onset with headache, then adiposity, unsteadiness, papillitis and failing vision. Genitalia said to have become smaller. Later blindness, two convulsive seizures, marked general weakness. Decompressive operation, hyperpyrexia, death. Tumor filling fourth ventricle.*

A boy 5 years old was referred by Dr Wright C Williams of Peoria, Feb 16, 1914. The patient was the sixth of eight children, the others being well. In the summer of 1913 he began to suffer from headache, later he grew fat and the genitals grew smaller. In the beginning of December he was brought to Dr Williams on account of headache and a tendency to stumble. There was a slight papillitis, especially in the right eye, and vision was considerably reduced. It failed rapidly, and he became completely blind about the first of January. Late in December there were two convulsive seizures three days apart. The Wassermann test was negative with both blood and spinal fluid, and two examinations of the latter for cells were negative. Urine negative.

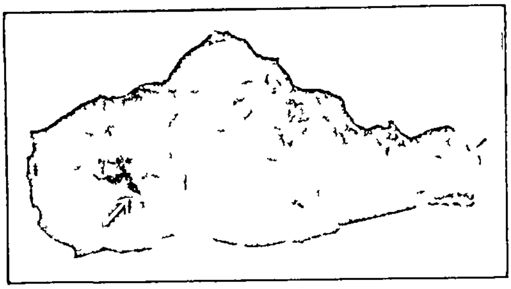

Fig 8 (Case 3).—Tumor of fourth ventricle

Examination.—Fat child with flabby musculature. Penis small, both testicles in the scrotum. Patient very weak, cannot walk or sit up unaided or hold the head erect for any length of time. Totally blind. Pupils equal and dilated. Constant rotary nystagmoid movements drawing the eyeballs upward and to the left. The movement to the left is rapid, the return slow. The eyes wink with the beginning of each nystagmoid movement. Dr E V L Brown made the following note "Right and left optic nerve atrophy, secondary to marked choked disks, nerve head swollen (right plus 2), scleral and pigment rings not seen, retinae not involved, vessels narrow, pupils react to light only with light directly in front." Hearing normal. Apparently slight paresis of right side of face and right arm. Knee jerks absent, ankle jerks slightly increased, right more so, bilateral Babinski sign. The patient could draw the knees up but could not raise the knees from the bed. Probably no sensory disturbance. Abdominal reflexes not obtained at first, but later weak response was obtained on both sides. Soft, blowing heart murmur at the base. Roentgen-ray examination showed normal sella turcica. Blood examination reds, 4,940,000, whites 11,000, hemoglobin 98. Urine normal.

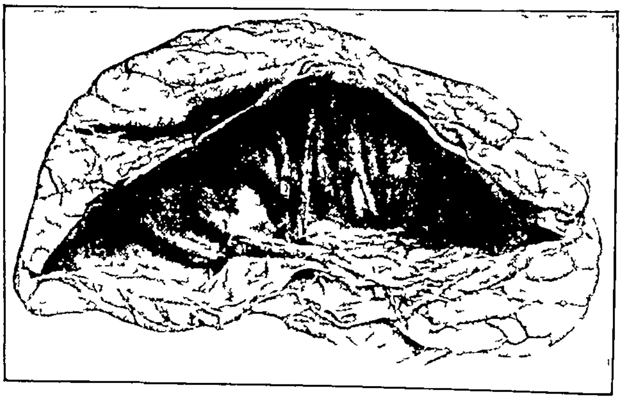

Fig 9 (Case 3).—Median section of brain showing marked hydrocephalus

February 25. Right subtemporal decompression made by Dr Dean Lewis. The brain pressure was very high. Soon afterward the arms and later the entire body twitched continually. The temperature rose to 108.6 F before death, eighteen hours after the operation.

Necropsy—The brain weighed 1,170 gm Marked downward bulging of the third ventricle was noted The hypophysis was normal The fourth ventricle was filled by a soft tumor the greatest dimension of which was 5 cm transversely and 3 8 cm vertically The tumor was connected with the pons Unfortunately I missed the opportunity to examine the hardened and sectioned brain, and failed to learn to what extent the pons was actually invaded All of the ventricles were considerably distended The tumor tissue examined microscopically was said to be made up of masses of darkly staining small round cells and to show considerable necrosis and in places small hemorrhages

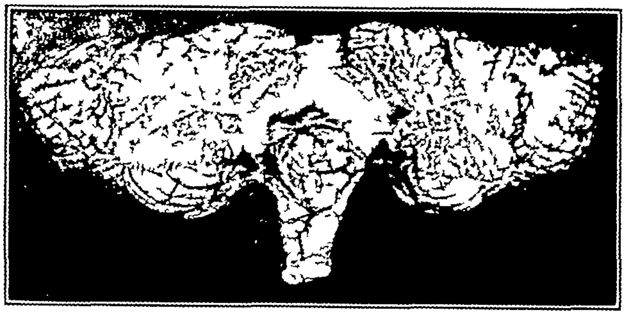

Fig 10 (Case 4) —Tumor in fourth ventricle

The histologic diagnosis was small round-cell sarcoma (I have not had an opportunity to see the specimens and know from experience that sarcoma and cellular glioma are frequently confused)

THERAPEUTIC REMARKS

Of these six patients three were operated on, all with disastrous results In Cases 1 and 6 subtemporal decompression was followed by death in thirty and eighteen hours, respectively In Case 3 a suboccipital operation resulted in death on the table before the dura was opened In Case 2 repeated lumbar puncture apparently gave temporary relief at times, but it naturally would more often be found to aggravate the symptoms Any sudden interference with the intracranial pressure condition appears to be dangerous, and this applies to the three methods used in the present cases The danger of death from the application of any of the usual cerebral decompressive methods, the practical impossibility of making a clinical diagnosis of intraventricular tumor, and the difficulty of access to these ventricles all conspire to place tumors of the third and fourth ventricles among inoperable brain tumors in the minds of most neurologists and surgeons However, the writer must agree with Professor Anton[6] of Halle that operative removal of tumors of the fourth ventricle is not theoretically impossible Some of them arise from the choroid plexus and are not attached to the walls, and others are only attached above, to the cerebellar vermes It would, therefore, seem possible in such cases to enter the ventricle through the vermes, or below, and possibly remove the tumor, provided the pressure in the posterior fossa was not too high at the time of operation In order to obtain a favorable pressure condition, Anton recommends operating at a period of relative freedom from headache and other pressure symptoms, and to perform a preliminary callosal puncture or puncture of one of the lateral ventricles The only practical suggestion to offer is this one, that if symptoms strongly point to posterior fossa tumor and nothing is found in the cerebellar hemispheres, then the surgeon may go a step further and also explore the fourth ventricle, at the same sitting, if a preliminary callosal puncture has been made, or else after an interval of a few days

30 North Michigan Avenue

ABSTRACT OF DISCUSSION

Dr Theodore H Weisenburg, Philadelphia Years ago I wrote a paper on this subject in which I reviewed the cases of tumor of the third ventricle reported in the literature I wrote this paper because I had had three cases of tumor of the third ventricle in every one of which diagnosis of tumor of the cerebellum was made On investigation I found that of the forty cases reported, not a single one had ever been diagnosed properly during life I then tried to establish a symptom complex Most cases of tumor of the third ventricle cause cerebellar asynergy, they all have internal hydrocephalus, with a paraparesis of all four limbs with the accompanying increase of reflexes With this there is nearly always paresis of associated ocular movement upward This symptom group would seem to be especially indicative of tumor of the third ventricle, and Dr Bassoe's case would seem to confirm this I believe that we can make a diagnosis of tumor of the third ventricle in life, for I have been able to do so Tumors of the fourth ventricle are quite difficult to diagnose Not in a single case, I believe, has a diagnosis been made in life In most of these cases the diagnosis has been tumor of the cerebellum Dr Mills and I tried to show that there is such a thing as cerebellar localization In cerebellar localization the trouble has been that there is usually no attempt to make a diagnosis of tumors in the separate parts of the cerebellum Recently I have had two cases in which from our localization I was enabled to make an exact diagnosis In one a tumor of the superior portion of the right cerebellum was diagnosed and operated, with removal of the tumor, and the child is now living and perfectly well In another case that of a man we diagnosed tumor of the left lobe of the

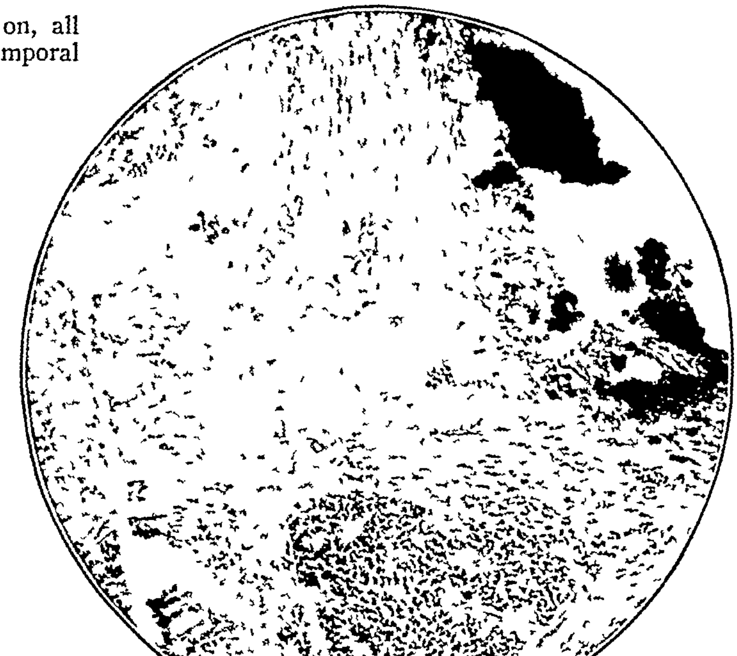

Fig 11 (Case 4) —Photomicrograph showing deeply stained calcareous masses

cerebellum, and found and removed the tumor Localization in the cerebellum should be advanced, that is, we should not be content to make diagnosis of tumor of the cerebellum, but should be able to say that a lesion is located in a certain and definite part of the cerebellum

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[6] Anton Arch f Psychiat 1911 xlviii 523

Dr Tom A Williams, Washington, D C In tumors of the third ventricle there is another sign to be found which was not brought out by Dr Bassoe in his case report, and I do not remember whether it was brought out by Dr Weisenburg in his original communication The sign is one that was shown in a case we had in Washington in 1907 which was diagnosed during life and in which we had a postmortem There were photographs in the case Diagnosis was made of tumor in the third ventricle or of the corpora quadrigemina, involving both sides, and it was made by reason of several findings First, because of complete ophthalmoplegia, second, from the eye grounds because of the marked choking of the disk in conjunction with the extreme rapidity of the onset, and, third, on account of the decerebrate attitude of the patient This attitude is one that was, I believe, first described in connection with physiologic experiments, and consists of the quadrupedal progression reaction, namely Suppose you scratch the right arm of the subject, there will immediately be, let us say flexion of the right arm, and at the same time there will occur flexion of the counter leg, along with extension of the contralateral arm and extension of the homolateral leg, that is to say, the attitude and movement of quadrupedal progression This is due to impulses from the spinal centers when separated from cerebral control On that ground mainly the diagnosis in this case was made And photographs show the child's position after stimulation of one area in various attitudes as described, in that position, which is the position of the dog's progression Hughlings Jackson published a case showing this attitude I do not remember whether that was a case of this particular lesion neither do I know whether a necropsy was obtained The sign may depend on rapidity of onset, because it is possible that, in the gradual progress of a unilateral tumor slowly invading the third ventricle, gradual adaptation may prevent this particular syndrome or the patient may die before it develops

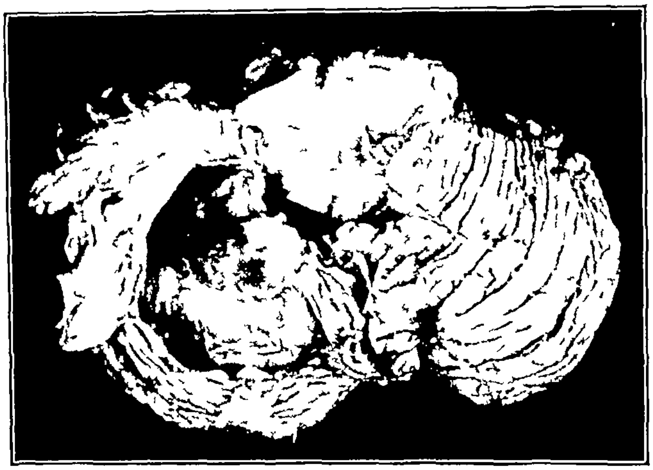

Fig 12 (Case 5) —Tumor on left side of fourth ventricle

Dr Harold N Moyer, Chicago I saw the fifth case described by Dr Bassoe on one occasion but the opportunity for examining was none of the best In this case there was a striking clinical resemblance to paretic dementia The symptoms would become very pronounced then subside, and his conduct in the periods of euphoria, which were marked, strongly suggested paresis He was distinctly paretic on the left side and persistently leaned forward and to the left, he would straighten up, but would soon automatically resume this position I expressed the opinion that he had a brain tumor but of its location I had no idea I certainly never suspected that it was a subtentorial growth Dr Bassoe says the eyegrounds were normal At the time I examined him it seemed to me that the left disk was somewhat altered but not significantly so

Dr Lawson G Lowrey, Hathorne, Mass About a year and a half ago I made a necropsy on a case presenting a tumor presumably arising in the third ventricle and extending from there into the lateral ventricle For two years the patient had been in Danvers Hospital with a diagnosis of paresis The symptoms were largely those of paresis, the onset had been rather gradual, the individual was dull, extremely indifferent and had demented very rapidly, with a doubtful blood Wassermann and no satisfactory spinal fluid examination This tumor, too, was a glioma So far as any exact examination that had ever been made showed, there were no symptoms that might be referred to a tumor

Dr A L Skoog, Kansas City, Mo While these tumors of the third and fourth ventricles are difficult to diagnose, yet frequently you can suspect localization Probably quite a number of errors have been made on account of not giving sufficient consideration to the chronology of the case We know that in cases exhibiting these various symptoms, and particularly those referable to the cerebellum and the medullary centers, and also those due to the secondary internal hydrocephalus, there is an onset of the symptoms at different periods I believe we should lay emphasis on carefully noting just when each symptom begins In this respect a careful history is, of course, important There are case histories that are accurate and others that are not

Dr Peter Bassoe, Chicago I must repeat what I said at the outset that the symptoms in these tumors are caused either by pressure or invasion of neighboring organs, or by hydrocephalus Dr Skoog says, by a study of a sequence of symptoms we may form some opinion as to where the tumor originated In the case of the fourth ventricle, if a tumor starts from the choroid plexus, there would necessarily not be symptoms until a certain amount of hydrocephalus was produced If the tumor starts from the floor you may get symptoms on the part of the cranial nerves, or if it starts from the vermes you may have early localized

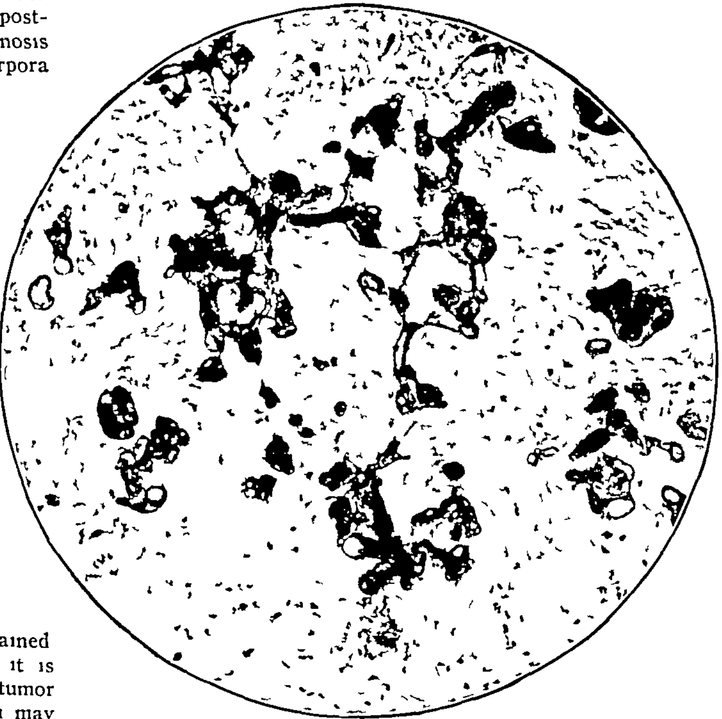

Fig 13 (Case 5) —Photomicrograph of tumor showing hyaline transformation of vessels

cerebellar symptoms In the case of the third ventricle, quite necessarily the symptoms are those of hydrocephalus We can hardly speak of any focal symptoms there unless the tumor has grown from the ependyma into the brain structure, or has started in some other structure and extended into the ventricle In my only case of tumor of the third ventricle, the patient had a typical cerebellar ataxia The very early loss of conjugate movements and early blindness, and the quite precocious development of hair and of the genital organs led us to suspect a tumor in the general vicinity of the pineal gland, or corpora quadrigemina, or in the third ventricle, but we did *not* venture to say in which of these structures the tumor might have started

In regard to the diagnosis between tumors of the fourth ventricle and tumors starting in the cerebellum, this is extremely difficult. But if in a case with ordinary cerebellar tumor picture there is marked variation in the subjective feeling of the patient on changing position, together with quite a marked increase in cells and globulin of the spinal fluid, then I would be suspicious of a tumor in the fourth ventricle In the case of which Dr Moyer speaks, there was no change in the disks that I could make out, but I did not examine the patient during the last year of his life I was told bv three or four of the men who saw the case that they had never noted any change in the disks, but the patient was not under the observation of any one man during the whole period

There is one aspect that has not been touched on here, and that is the possibility of any surgical treatment in these cases In my three operated patients the surgical results were notoriously bad, one died on the table and the other two did not rally Could we have done anv better for those patients? It is only within a year that Professor Anton of Halle has written a paper seriously proposing operative procedure in cases of tumor of the fourth ventricle, providing it arises from the roof or choroid plexus He says that at least half the tumors arise from the roof By first doing a callosal puncture or puncture of the lateral ventricle, thus relieving the pressure from above, the suboccipital opening can be made with less shock He believes it might be possible to go through the vermis, which usually has been gradually thinned out by the pressure, as was the case in some of my cases, or that we might go through the foramen Magendie, and remove the tumor About ten years ago it was suggested by Henneberg that cysticercus cysts of the fourth ventricle might be removed in that way

Sickness in Rural Health Districts—During the summer of 1915 the New York state department of health made an inquiry to determine the amount and nature of sickness usually and fairly constant in rural communities Five townships and two villages in Albany County were the subject of this survey The district was considered fairly typical of rural New York The population of these townships numbered 5,676, and the number included in the records 5,187, or 91 2 per cent of the total The number of persons admitting that they were ill was 582, or 11 2 per cent of the population visited An examination of 397 schoolchildren in a rural district of New York shows that 51 3 per cent had defective teeth and 61 5 per cent enlarged tonsils or adenoids The total number of cases of illness in six townships and two villages was 1,242, of which 688 were not under the care of a doctor In this survey the investigators reported that teeth defects were generally present at all ages This investigation brought out the further fact that while school inspection pointed out the defects of the children, no means was provided for the correction of such defects, and also that most people were willing to pay a moderate price for treatment but could not pay "fancy prices"

THE PROGRESSIVE TORSION SPASM OF CHILDHOOD (DYSTONIA MUSCULORUM DEFORMANS)

A CONSIDERATION OF ITS NATURE AND SYMPTOMATOLOGY *

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NEW YORK

The subject which I would present for your consideration is that curious form of motor disturbance known as the progressive torsion spasm or dystonia musculorum deformans

Dec 17, 1910, Ziehen,[1] at a meeting of the Berlin Psychiatric Society, demonstrated a child 10 years of age with a spasmodic affection of unusual type Four similar cases had come under his observation, three in members of the same family [2] In all, the affection had been gradually progressive and was characterized by spasm and hypertonicity of the musculature, with curious twisting and torsion movements of the extremities and trunk The muscular spasm was considerably increased by active movement and diminished during rest The gait and station were chiefly affected and there was marked lordosis of the spine The tendon reflexes were present but difficult to elicit, because of the tension and torsion of the muscles Sensation and intelligence were not affected, and, in one of the cases, necropsy had revealed no essential lesion All of the patients were Russian Jews

In discussing the character of the motor disturbance, he stated that while there was a certain general resemblance to the movements of chorea and athetosis, these affections as well as hysteria could be definitely excluded He regarded the affection as a special type of the degenerative spasmodic neuroses, allied to impulsive tics, and proposed the name "tonic torsion neurosis"

In 1911, Oppenheim[3] followed with a more elaborate description of the disease, which he regarded as organic and not functional in nature, and emphasized the close relationship of the spasm to athetoid movements

Oppenheim's cases, like those of Ziehen, began in childhood (from the eighth to the fourteenth year) All were either Russian or Polish Jews The affection began insidiously in one of the extremities, either the leg or the arm, but eventually the muscles of the thigh, pelvis and spinal column were always chiefly affected There was marked lordosis with clownlike, bizarre movements, and a curious disturbance of the gait which

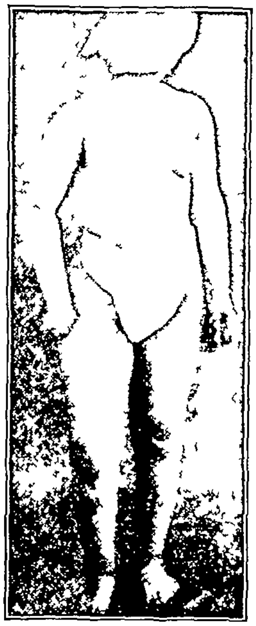

Fig 1 —Hemiplegic type of progressive torsion spasm showing the attitude in a case of hemidystonia dextra of eight years duration subsequently, the left arm and leg showed evidences of involvement

suggested such descriptive terms as the "dromedary gait" or "monkey gait" In some of his cases backward progression was easier than the usual method He also observed a tendency to clonic and rhythmic movements, mobile spasm and even tremor, somewhat resembling that of paralysis agitans There was also a certain resemblance to chronic chorea, and still more to athetosis The tendency to tonic muscular spasms with twisting and torsion movements was, however, the predominant feature

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* From the Neurological Wards of the Montefiore Home and Hospital

* Read before the Section on Nervous and Mental Diseases at the Sixty Seventh Annual Session of the American Medical Association Detroit June, 1916

* Because of lack of space this article is abbreviated in The Journal The complete article appears in the Transactions of the Section and in the author s reprints

[1] Ziehen Tonic Torsions Neurose Neurol Centralbl 1911, xxx 109 Allg Ztschr f Psychiat 1911 lxviii 281

[2] Schwalbe had previously recorded this group of cases from Ziehen s Clinic as 'Eine Eigenthumliche tonische Krampfform mit hysterischen Symptomen Inaug Diss Berlin 1908

[3] Oppenheim Ueber eine eigenartige Krampf Krankheit des Kindlichen und *jugendlichen* Alters *Dysbasia Lordotica Progressiva* Dystonia Musculorum Deformans Neurol Centralbl 1911 xxx 1090

Oppenheim further emphasized the association of hypotonia with hypertonia in these cases The tendon reflexes often could be elicited only by reinforcement, and other evidences of muscular relaxation and flaccidity were present This conjunction of hypotonus and hypertonus, the occurrence of clonic and tremor movements, and his view as to the organic nature of the affection represent the chief differences from the original description of Ziehen He further advanced the theory that the disease is caused by an anatomic lesion in some portion of the central nervous system which controls muscle tonus, bearing in this relation a certain analogy to paralysis agitans and the double athetosis He suggested "dysbasia lordotica progressiva" or "dystonia musculorum deformans" as better descriptive names for the disease

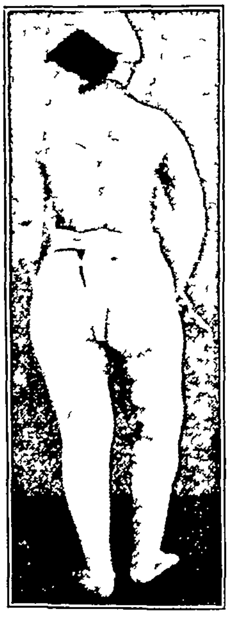

Fig 2—Posterior view hemiplegic type of progressive torsion spasm hemidystonia of eight years duration

In the same year Flatau and Sterling[4] reported similar cases and confirmed the clinical picture as outlined by Ziehen and Oppenheim In their cases, the early age, insidious onset, gradual progression, the racial tendency and general character of the muscular spasm were all present As in the original descriptions, the muscles of the face and articulation were not affected, and the torsion spasm was confined to the extremities and trunk The movements were involuntary, tonic and twisting in character, often producing curious spiral movements of the trunk They were not rhythmic or harmoniously bending, however, as in athetosis, and a certain monotony and stereotypy were quite evident In their cases certain of the spasmodic movements were relieved by slight accessory movements in other parts (*Hilfsbewegungen*), suggesting the method of relief occasionally encountered in tic convulsive Sometimes the movements were quick, like those of chorea, and occasionally were of such amplitude as to suggest the hemiballismus of Kussmaul Occasional tremor movements suggestive of paralysis agitans were also observed There were no true associated movements, but frequently irregular and bizarre contractions in other muscle groups accompanied a voluntary act The tendon reflexes were not exaggerated, but were diminished or absent, and there was no hypotonia

Like Oppenheim, they regard the affection as organic, and emphasize its close relationship to the double athetosis It differs, however, in localization, the trunk and proximal segments of the extremities being chiefly affected and in the type of the movements, namely, the twisting, torsion spasm with sudden brusque, clonic movements, and occasional tremors They would call the affection "progressive torsion spasm"

In June, 1912, this subject was presented by Fraenkel[5] to the New York Neurological Society, and four cases of the disease were recorded, two of which have at various times been under my observation, and one I presented to the New York Neurological Society, in 1908, as an unusual case of myoclonia[6]

Fraenkel's study verified the accuracy of the earlier clinical observations, and like Ziehen he relegated the affection to the degenerative neuroses, grouping it with tics and spasmophilias He suggested "tortipelvis" as a distinctive designation for the affection An excised fragment of muscular tissue from one of Fraenkel's cases was examined by Harlow Brooks and showed possibly some slight parenchymatous, but no atropic changes In two of his cases intraspinal injections of magnesium sulphate were given with only temporary abatement of the spasm

Since these publications, a number of observations have been recorded both in this country and abroad, showing that the disease is by no means a rare one In this country Spiller,[7] Climenko,[8] Beling,[9] Abrahamson,[10] and Diller[11] have all reported cases which conform very closely to the original clinical picture as drawn by Ziehen, Oppenheim, Flatau and Sterling

Spiller's case was somewhat unusual in that the patient was not of Jewish blood, two sisters were also afflicted with the disease and all were mentally defective

I may mention that Bregman,[12] like Flatau and Sterling, failed to find the hypotonicity on which Oppenheim had laid so much stress, he also observed a myotonic reaction in the muscles of the forearm, and at times the spasm was quite painful

In a very interesting case described by St Bernstein,[13] the duration of the disease was twenty-five years, and for a number of years the affection had been stationary, having apparently run its course In this case there was distinct dysarthria, which has not been noted by any other observer This disturbance of the speech St Bernstein believed to be a dystonic phenomenon, dependent on hypertonicity and spasm of the muscles of articulation

As thus far the muscles supplied by the cranial nerves have not been affected in this disease, I think we should accept this observation with some caution and consider the possibility of high involvement of the neck muscles supplied by the upper spinal nerves and its possible secondary effect on articulation

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[4] Flatau and Sterling Progressiver Torsions Spasmus bei Kindern Ztschr f d ges Neurol u Psychiat 1911 vii 586

[5] Fraenkel Dystonia Musculorum Deformans Tortipelvis Jour Nerv and Ment Dis 1912 xxxix 361

[6] Hunt, J Ramsay A Case of Myoclonia of the Trunk Muscles Jour Nerv and Ment Dis 1908 xxxv 656

[7] Spiller Case of Dystonia Musculorum Deformans Jour Nerv and Ment Dis 1913 xl 529

[8] Climenko Case of Dystonia Musculorum Progressiva, Jour Nerv and Ment Dis 1915 xlii 167 Med Rec New York 1914 lxxxvi 1000

[9] Beling Case of Dystonia Musculorum Progressiva Jour Nerv and Ment Dis 1912 xxxix 461

[10] Abrahamson Case of Dystonia Musculorum Deformans Jour Nerv and Ment Dis, 1913 xl 38

[11] Diller Dystonia Musculorum Deformans with Report of a Case Jour Nerv and Ment. Dis 1916 xliii 337

[12] Bregman Zur Kenntniss der Krampfzustande des jugendlichen Alters Neurol Centralbl 1912 xxxi 885

[13] St Bernstein Ein Fall von Torsions Krampf, Wien klin Wchnschr 1912 xxv, 1567

To summarize, the progressive torsion spasm is a disease of childhood first described by Ziehen, and with rare exceptions has been confined to descendants of Russian and Polish Jews It is essentially a progressive torsion spasm of the trunk and extremities, often associated with hypotonia and sometimes with movements of a more clonic or rhythmic character, suggestive of chorea and athetosis Tremor movements are occasionally noted The characteristic feature is the twisting and tractile quality of the spasm with the attendant distortion of the trunk and extremities, and the bizarre disturbances of posture, gait and station Sensation is intact, and there are no symptoms of pyramidal tract involvement It is a progressive affection with a limited symptomatology, and may eventually become stationary

ANALYSIS OF PERSONAL OBSERVATIONS

Symptomatology and Types —Six cases of this curious disease have come under my personal observation, all of the patients being at various times in the neurologic wards of the Montefiore Home and Hospital, which affords an unusual opportunity for prolonged and systematic observation

In all the clinical picture corresponded very closely to the descriptions of Ziehen, Oppenheim and Flatau In all of the cases save one, the affection began in childhood (6, 8, 9, 10 and 11 years, respectively), the exception being a typical case in which the first symptoms appeared at the age of 17 years The sexes were equally divided, and all the patients, with one exception, were of Jewish origin

The affection uniformly made its first appearance in one of the lower extremities, in four of the cases an interval of from one to two years elapsing before the opposite limb was involved

In one case, the distribution in the extremities was hemilateral for a period of nine years (Figs 1 and 2) In no case was the hand or arm the seat of primary involvement, although the upper extremities were affected in the later stages in three cases

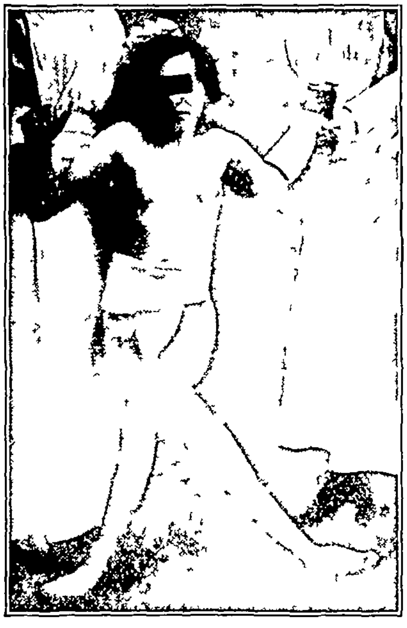

Fig 3 —Paraplegic type of progressive torsion spasm of six years' duration the symptoms of dystonia are limited to the lower extremities and lower portion of the trunk

The lower portion of the trunk and the lower extremities were always most constantly and most severely affected, and a slow but definite progression was noted in all of the cases without exception The muscles supplied by the cranial nerves were not affected, namely, those subserving the functions of articulation, facial expression and the ocular excursions In one of the severe cases with high involvement of the neck muscles, there occurred, during an access of the motor paroxysm, slight contractions of the lower portion of the face, which I regarded as purely secondary, the result of a great effort to counteract the spasms

In one of the cases the motor disability was so severe and so distinctly limited to the lower extremities as to suggest a paraplegic or pseudoparaplegic type (Figs 3 and 4)

The character of the motor disturbance varied somewhat in the different cases, in this harmonizing with the reports of other observers The tonic or hypertonic form with slow, torsion, twisting spasms of large muscle groups of the trunk and extremities predominated and was observed in all of the cases Deforming functional contractures accompanied this type, which could always be overcome by strong passive movements Especially characteristic in some of the more advanced cases has been a plantar flexion of the foot with extreme flexion of the toes producing a marked incurvation of the plantar surface (the semilunar foot, Fig 5)

There was also a more active stage, characterized by movements of clonic or rhythmic character, accompanied by great motor agitation and unrest, suggesting somewhat the restlessness of chorea or athetosis Two of the cases belonged to this type and produced the clownish movements, the bizarre postures and progression which suggested to Oppenheim such descriptive terms as the "dromedary gait" and the "monkey gait" In these cases the face was flushed, there was sweating and tachycardia, and the general motor excitement was at times so extreme as to be most distressing and alarming, requiring at certain periods morphin and scopolamin for relief In two patients running was better performed than walking, and retrograde progression was also noted In the other patients, the spasm was more tonic and much less active in character, and in bed or in a chair they rested with considerable comfort In the late stage of this more tonic form a pseudoparalytic condition supervened, which was not paralysis in the ordinary sense, for some power of movement was retained, but paralytic so far as any voluntary control of the extremities was concerned

Definite hypotonia was present in four of my cases, and in two it was absent, so that I do not regard this as a constant symptom in all stages of the disease The tendon reflexes were present in all, although usually elicited with difficulty, and often only after repeated attempts, or during some favorable moment of relaxation Hypertrophy of certain muscle groups was occasionally observed, as well as slight general wasting in the late stage, but without degenerative electrical changes

None of the characteristic phenomena of myotonia were demonstrable in any of my cases

There was no intelligence defect, and all of the patients were of average mental development There were no hysterical manifestations or stigmata, and in none of the cases was there any tendency to stammering, impulsive speech, fixed ideas or phobias, which are so common in the degenerative motor neuroses Nor were there noted any of those slight movements (*Hilfsbewegungen*) for the relief of spasm, so often present in cases of torticollis, such as laying the forefinger on the chin

All of my patients would assume a definite fixed position while sitting or recumbent, which gave them most relief from the spasm Occasionally, certain voluntary movements of an arm or leg would be made to influence or alleviate the severe spasm, experience showing that such movements had a relaxing effect on the dystonic disturbance This was not, however, a psychic mechanism, and similar manifestations are occasionally observed in athetosis

Remissions and Exacerbations —Generally speaking, the disease was always gradually progressive Occasionally, a slight improvement or remission was noted in some of the cases, but this was always of comparatively short duration

A rather sudden progression occurred in one case while under observation (Fig 6) This was an advanced type with involvement of all four extremities and the trunk The spasm made its appearance rather suddenly in the neck muscles, which had up to that time been free This nuchal spasm grew rapidly worse, and the attempt to control it seemed to disorganize the entire motor stability of the patient, and there ensued a period of about six weeks during which the child rolled and tossed in a veritable agony of movement No position was found that would give relief, and I recall few more distressing spectacles than that of this child with a perfectly clear mind, struggling days and nights in the grip and conflict of these massive involuntary movements During the few hours of sleep which came on after exhaustion, there was complete repose, but on regaining consciousness the spasms and torsions returned with unabated violence Morphin and scopolamin were given to alleviate the suffering, and it really looked for a time as if fatal exhaustion would ensue, but the spasms finally grew less violent, it became possible to find a position which gave relief, and eventually the former conditions were resumed — the patient being chair-ridden and in certain postures fairly calm, with only occasional dystonic or torsion spasms The control of the neck muscles was left permanently impaired, however, so that now no movement of the head is possible without strain and consecutive spasm (Fig 7)

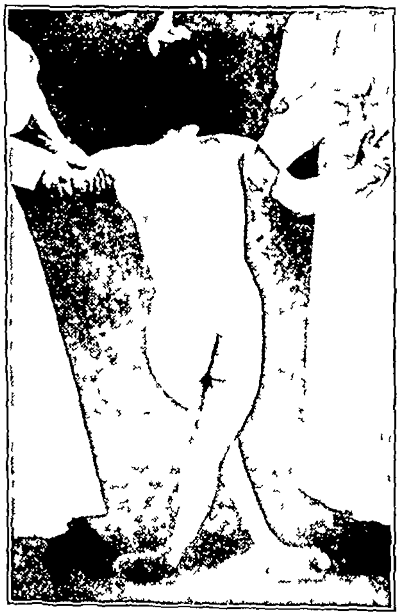

Fig 4 —Posterior view paraplegic type of progressive torsion spasm dystonia para plegica

It would seem, in an exacerbation of this kind, as if the further impairment of what remained of this controlling mechanism jeopardized the compensatory stability which had been acquired during the gradual progress of the malady

The Character of the Movements and the Nature of Torsion Spasm —The movements varied in quality and character in the different cases and at different stages of the disease There was always spasm, occasionally tremor, and sometimes movements of a choreiform or athetoid type

In the early stage when an extremity is first affected, there is a disturbance in the harmony of movement, the foot turns outward or inward in walking, or the leg is thrown abruptly outward In one case, a fine tremor movement always preceded and accompanied the spasm Later, the spasm becomes more and more prominent and assumes the characteristic features of twisting and torsion, a variable hypertonia or dystonia in which the various muscle groups contract and relax When the disease is well advanced, it is my experience that during rest those muscle groups showing spasm are more or less constantly in spasm, while their antagonists are usually relaxed and hypotonic

The torsion spasm shows, therefore, a certain monotony or stereotypy after it is well advanced, and at rest the only signs may be repeated dorsal flexion of an ankle with an occasional spasmodic flexion movement of the knee or hip

Any active movement, however, especially the effort to stand or walk, brings on a much wider dissemination of the spasm The limbs are then drawn into weird postures or thrown out at strange angles, and walking or standing is quite impossible without assistance (Figs 6 and 7) These are not true associated movements, but are associated dystonic phenomena

In this stage the great involvement of the trunk muscles and hip girdle is quite apparent, producing lordosis with prominence of the buttocks and lateral distortion of the trunk from spasm of the erector spinal' group and abdominal muscles When the patient attempts to stand in this stage of the disease, there is not the normal postural fixation of the muscles Instead, the muscles pursue quite independently their respective hypertonic and hypotonic tendencies, and the involuntary nature of the dystonia becomes very evident

There is in this late stage not only an absence of postural reactions of the normal tonus in standing, but also definite disturbance of the voluntary control of tonus in the affected muscle groups For example, if the effort is made to carry out a plantar flexion of the foot when the foot is in dorsal spasm, the only response is a further increase of the extensor spasm, the exact reverse of what the voluntary effort is attempting to accomplish The command is understood, the effort is made, but the antagonist which is in a state of hypertonia receives the impulse and not the agonists This effort may be repeated over and over again with the same result If, however, the request is made for a dorsal flexion of the foot, which is already in a state of strong dorsal flexion, instead of there being an increase of the already existing dorsal flexion, there is a sudden movement in a reverse direction, that is, a plantar flexion In other words, there is an inability to dissociate harmoniously the essential tonus elements of a simple movement, namely, contraction of the agonists and decontraction or relaxation of the antagonists A similar reversal of normal voluntary movement may also be observed when the foot is in strong plantar flexion, that is, an attempt to extend the foot only increases the already existing plantar flexion, whereas a voluntary effort in the direction of the already existing flexion produces a reverse movement in the opposite direction This phenomenon I would designate the paradoxical or reverse phenomenon of dystonia, and would emphasize its diagnostic importance in the differentiation from spastic, hysterical and other forms of spasmodic contractures It is, I believe, a pathognomonic sign, but thus far I have observed it only in advanced cases in the pseudoparalytic stage It was typically present only in the ankle joint, and in one case in the wrist joint as well

The difficulty in motion is therefore not only that of overcoming spasm, this we see in spasticity and the rigidity of paralysis agitans, but also a disharmony between the contraction and relaxation of agonistic and antagonistic groups of muscles Some observers, notably Lewandowsky,[14] regard the essential element in athetosis as an inability to dissociate movements, so that any single voluntary effort is split up into numerous associated movements In contrast, I would regard the essential disturbance in torsion spasm or dystonia as an inability to dissociate the tonus elements of innervation, which are the underlying factors in every movement There is in addition the absence of that inhibition or control which is a characteristic of all involuntary movements, such as tremor, chorea and athetosis, and which is an especially important factor in the regulation of the tonus mechanism

Unusual Clinical Types—In my series of cases, there were two which presented somewhat unusual features and might simulate other forms of organic disease of the central nervous system For this reason the clinical histories will be given in more detail

Case 1—This was a case of the hemiplegic type of progressive torsion spasm (Figs 1 and 2)

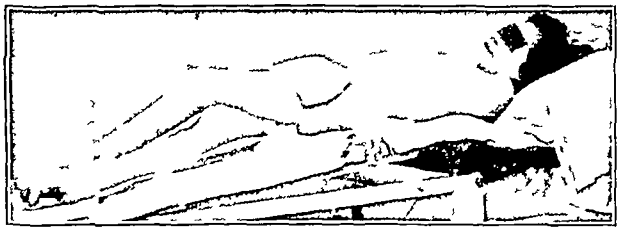

Fig 5—Paraplegic type of progressive torsion spasm (recumbent posture) Note the general wasting of the calf muscles and the semilunar foot

Case 2—*Paraplegic type of progressive torsion spasm* (Figs 3, 4 and 5)—A girl, aged 12 years, of Jewish parentage, gives no family history of any similar disease The birth was normal and she was breast fed until the fifteenth month Her early development was normal She had measles at the age of 3

Onset—The first symptoms of torsion spasm appeared at the age of 6 with a dragging of the right foot and a tendency to throw the right leg outward in an aimless manner while walking A plaster-of-Paris cast was applied for three months without improvement During the course of the next few months the muscles of the right foot and leg became more drawn and contractured One year later the left leg was similarly involved These symptoms have gradually progressed, and since the age of 9 she has been unable to stand or walk Numerous tenotomies were performed without material benefit

The face, speech, arms and trunk muscles are not affected

At this time (ninth year) the child was brought to the Vanderbilt clinic for examination The lower extremities were then in a state of tonic spasm, the legs were extended, The feet and toes in plantar flexion Some of the muscle groups of the legs showed momentary hypotonia The trunk was not affected The tendon reflexes were elicitable with difficulty There was no clonus, and the plantar reflex was [illegible] of interpretation because of the marked plantar [illegible] f the foot and toes The Babinski phenomenon how[illegible] not present The muscles were in a state of hyper[illegible], and there was only moderate torsion spasm No [illegible]ted movements were noted The movements of the [illegible] were normal and the supinator, biceps and triceps jerks were normal The abdominal reflexes were active The movements of the face, mastication, articulation and the ocular excursions were quite normal The pupils were equal with prompt responses Intelligence was normal

This case at this time was regarded as one of dystonia musculorum deformans of unusual type, although the resemblance to a spastic paraplegia with contractures was rather striking Subsequently, a bilateral subtemporal decompression was performed at the Polyclinic Hospital, presumably for the relief of a supposed cerebral lesion The child made a good recovery from this operation, which naturally was without effect on the subsequent course of the disease

Two years later she was admitted to the neurologic wards of the Montefiore Home and Hospital

Since the previous examination there has been a distinct progression of the spasm upward, with involvement of the hip girdle and lower portion of the back and abdomen In the recumbent posture there is marked torsion spasm of the muscles of the erector spinae group in the dorsolumbar region on the left side The corresponding muscle mass on the right side is somewhat relaxed, and there is a constant massive torsion and twisting with variable scoliosis and kyphoscoliosis The lower portion of the abdominal wall also participates in the spasm

The right lower extremity is extended and the foot is held in a position of extreme plantar flexion including the toes, producing a conspicuous concavity of the plantar surface (the semilunar foot [Fig 5]) Some of the muscle groups are hypotonic and others hypertonic and in spasm, which fluctuates in intensity from time to time Occasionally, the leg will be drawn up in sudden flexion

The position of the left lower extremity is changed from time to time by slow constant flexion movements of the knee and hip As on the right side there is an exquisite semilunar deformity of the foot with plantar spasm of the toes

With the fluctuations in the hypertonicity, a hypotonus of certain muscle groups is quite evident on palpation Active or passive movements produce a considerable increase in the tonic phenomenon with spasms and distortion of the extremities There are no tremors, athetoid or choreiform movements, and no true associated movements Any of the contractures may be overcome by firm traction and pressure, and there is no structural fixation of the joints

There is some, but very slight power of voluntary control of extremities, so great is the degree of the dystonic disturbance In the distribution of the involuntary spasms there is a certain monotony and stereotypy, so that it varies in localization but little from day to day The child is fairly comfortable in the recumbent posture of election, but any change from this position increases the tendency to involuntary spasm and strain In attempting voluntary movements of the ankle the paradoxical or reverse phenomenon of dystonia is very evident, for example, if the foot is in a state of tonic dorsal extension and the command is given to flex the foot, the result is an increase of the extension spasm If the command is now given to extend the foot, that is, a voluntary effort in the direction of the involuntary spasm, the reverse movement takes place and vice versa if the foot is in plantar spasm The same phenomenon may sometimes be demonstrated in movements of the knee, but is especially characteristic and well marked in the ankle

An attempt to carry out a certain definite movement of an extremity is accompanied by tonus disturbances in other groups of muscles of that extremity, and even on the opposite side

The child is unable to stand alone, but if supported on either side, the muscles of the legs and hip girdle fail to respond to the postural reflexes, and the variable spasm and relaxation goes on involuntarily and in a perfectly aimless manner The legs will be suddenly drawn up, or there is performed a series of slow involuntary scratching-like movements with the foot, but there is not the slightest trace of any coordinated effort on the part of the legs to stand or support the trunk In this position the spinal column is perfectly free and mobile, but its lower portion tends to be drawn by spontaneous contraction into kyphoscoliosis

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[14] Lewandowsky Ueber die Athetose double Deutsch Ztschr f [illegible] 1905 xxix

The knee jerks are elicited, but with difficulty, and this is especially true of the Achilles jerks The plantar reflexes cannot be tested very satisfactorily owing to the marked plantar spasm There is no Babinski response The abdominal reflexes are active The arms, upper portion of the trunk, neck and all muscles supplied by the cranial nerves are normal in every particular The sensations are normal The musculature of the lower extremities below the knees is generally atrophic, but this is a secondary atrophy and there are no qualitative changes in the electrical reactions The pupils are equal and react The mind is perfectly clear, and intelligence is of normal standard The optic disks are normal

The urine, Wassermann test of the blood and the visceral examinations are all negative

Comment—This case is of unusual interest because of the paraplegic localization of the dystonic disturbance, the early appearance of the paralytic stage, and during the earlier period the moderate degree of involuntary torsion movements, thus simulating a spastic paraplegic state

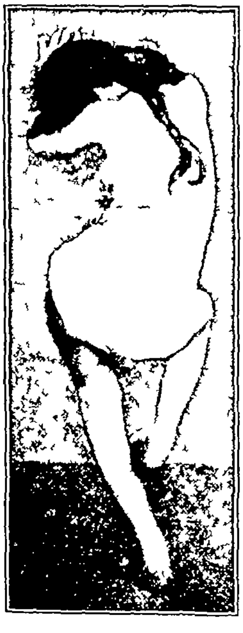

Fig 6—Advanced case of progressive torsion spasm involvement of the trunk neck muscles and all four extremities Note the bizarre clownish attitude and the poorly developed musculature of the lower extremities

NATURE OF THE DISEASE

In agreement with Oppenheim and most subsequent observers, I regard the progressive torsion spasm as an organic affection of the central nervous system In favor of this view may be mentioned the gradual progression, the peculiar characteristics of the motor disturbance, its association with tremor, choreiform and athetoid movements, the gradual generalization of the spasm until the entire voluntary musculature is involved, sparing only the muscles supplied by the cranial nerves, and finally the absolute chronicity of the clinical picture

There is also important negative evidence in the absence of hysterical stigmata and the mental characteristics of the convulsive tic, which usually play so important a role in the functional motor neuroses of hysterical or psychogenic origin

Any attempt to localize the lesion in the present state of our knowledge is purely a matter of conjecture It is, however, not without interest to theorize in this particular, so that when an opportunity is offered for pathologic investigation, the various theories which have been offered may be confirmed or refuted

In a recent pathologic study of the juvenile paralysis agitans, I found as the essential lesion an atrophy of the motor cells of the globus pallidus system,[15] that is, not only the large multipolar cells of the globus pallidus proper, but also the large multipolar cells of similar form which are scattered among the smaller ganglion cells of the putamen and caudate nucleus I therefore regard the juvenile paralysis agitans as a true system disease limited to the efferent motor cells of the globus pallidus mechanism, and consider this to be the essential lesion underlying the paralysis agitans syndrome In other words, this motor mechanism of the corpus striatum plays an important role in the control of the extrapyramidal motor system, through its connection with the red nucleus, the corpus subthalamicum and substantia nigra, an essential element of which is the regulation of tonus In the corpus striatum of Huntington's chorea, these large motor cells are preserved in both the putamen and caudate nucleus amid the extensive atrophy and disappearance of the smaller ganglion cells These smaller cells apparently exercise a coordinating and inhibiting influence on the large motor cells of the globus pallidus system, and when this inhibitory function is lost, there results chorea of the Huntington type, the Vogt[16] syndrome and Wilson's[17] syndrome of the corpus striatum representing, according to my conception, different degrees of involvement of these two cellular systems, the one motor the other coordinating and inhibitory

I would therefore regard the corpus striatum as a subordinate motor mechanism, having as its chief function the control of automatic and associated movements

This interpretation of the functions of the corpus striatum is not without interest to the subject under discussion, for many of its symptoms are also encountered in dystonia

All writers on the subject of the progressive torsion spasm emphasize its close relationship to athetosis and the frequent occurrence of tremor and choreiform movements, so that in any future pathologic investigation the cells and fiber systems of the corpus striatum should receive careful study

My own conviction is that a lower type of mechanism is at fault, one which is closely associated with the corpus striatum, but which is engaged in the regulation of tonus, especially in its relation to the reciprocal activities of agonistic and antagonistic muscles, for this I believe constitutes one of the essential factors in the motor disturbances of torsion spasm The preservation of facial expression and articulation is also against a localization in the corpus striatum, for we know from many pathologic studies that the face and articulation are both involved in this localization

CONCLUSIONS

As a result of this clinical study, the following conclusions may be suggested

The progressive torsion spasm of childhood (dystonia musculorum progressiva) is a progressive organic affection of the central nervous system

There is the gradual loss of a mechanism which is engaged in regulating and controlling tonus during the voluntary, automatic and reflex activities of muscles As a result, there is a disturbance or loss of those reciprocal tonus activities of agonistic and antagonistic muscles which are a part of every complex or synergic movement This, together with the loss of inhibition, I regard as the chief factors in the production of the motor disorder

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[15] Hunt J Ramsay Progressive Atrophy of the Globus Pallidus Tr Am Neurol Assn May, 1916.

[16] Vogt Cecile Syndrome du corps strie Jour f Psychol u Neurol 1911 xviii 479

[17] Wilson Progressive Lenticular Degeneration Brain, 1912 xxxiv, 295

It is a definite disease, and, like such affections as paralysis agitans, double athetosis and dyssynergia cerebellaris progressiva,[18] runs a progressive course and then remains stationary, other portions of the nervous system remaining unaffected

It is closely related to athetosis and yet in its typical form is readily differentiated from this affection Transition or combined forms probably occur

It is essentially a disease of childhood, but has appeared as late as the seventeenth year

The face and muscles of articulation are not affected except in the terminal stage, when there is involvement of the muscles of the neck Such mild disturbances as have then been noted are probably of secondary origin

With the characteristic torsion spasm there is usually but not always associated a not inconsiderable degree of hypotonia

There may be a hemilateral involvement of the extremities which may exist as such for some years A pseudoparaplegic or paraplegic type may also occur

The torsion movements continue, but are diminished during rest, and are greatly increased by any muscular activity, especially standing or walking, they cease entirely during sleep Other disorders of motility, as tremor, chorea or athetosis, are frequently associated

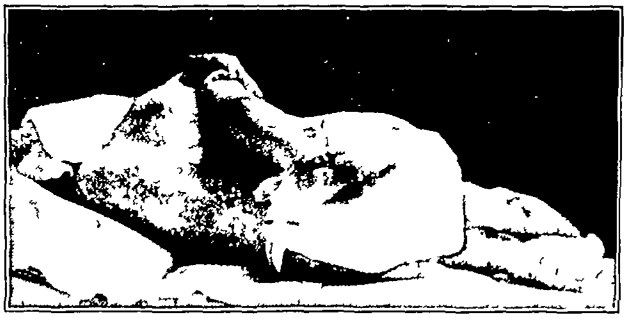

Fig 7—Advanced case of progressive torsion spasm in the recumbent posture of election (see Fig 6)

The trunk and lower extremities are chiefly affected, especially their proximal segments

In the later stages there is often a well-marked tendency to stereotypy or fixation in the distribution of the spasm, which predominates in certain muscle groups In this stage, I have observed in the movements of the ankle, and less commonly of the wrist, a curious reversal of the normal manifestations of tonus which may be termed the paradoxical or reverse phenomenon of dystonia When present it is, I believe, a pathognomonic symptom

The affection varies considerably in the degree of motor unrest and agitation which is produced This may occasionally assume sudden and violent proportions requiring strong sedatives and reducing the patient to a dangerous state of exhaustion It may occasionally constitute an agitated form or stage of the disease

The affection is progressive and incurable and, with few exceptions, has appeared only in descendants of Russian and Polish Jews

20 West Fiftieth Street

ABSTRACT OF DISCUSSION

Dr Hugh T Patrick, Chicago This is a rare opportunity to see a typical example of this interesting malady But first it might be of some interest and, perhaps, of some value, to state very briefly the error I made on this case about three years ago This boy, by the way is not of Polish-Jewish origin The parents are Hebrews but both father and mother say that so far as they know none of their antecedents have been of the Russian-Jewish folk When I first saw this boy in September, 1913, the condition had been progressing for about five months He was then 7 years of age and the family and personal histories were absolutely negative His symptoms began with a tonic contraction of the right leg Then a little later there was added to this tonic contraction occasional jerks which we might call clonic spasm, but which were simply a jerk of the leg The diagnosis I made was hysteric monoplegia, for the following reasons The boy held the right leg semiflexed or partly flexed at the knee and hip He walked in a peculiar way which was strongly indicative of functional disease Before Ziehen presented this subject, an assistant of his had shown the cases and thought the condition was hysteric Oppenheim was also inclined to make a diagnosis of hysteria in his first cases I do not say this to excuse myself, but to put on their guard those who may subsequently see these cases This boy walked in a very peculiar way, and we know that most of the bizarre, nontypical gaits are very apt to be manifestations of hysteria He would advance the affected leg, touch the toe to the floor and then hop with the left leg When I requested the boy to extend the right leg he apparently tried to do so, and then there were these intermittent jerks in the leg and he was unable to extend it In the act of turning a somersalt the affected leg straightened at the knee in a perfectly normal way

I believe that at that time the left leg was already beginning to show involvement When I began to examine it there occurred a slight tonic extension and when requested to move the foot at the ankle the boy was unable to do so This I also attributed to functional disease In other respects results of examination were negative The subsequent history was given me by Dr Haass, but I ought to say that later the case was seen by Dr Camp of Ann Arbor, who first made the proper diagnosis Later a well-known Eastern neurologist considered it a case of Wilson's disease The especial value in seeing one of these cases is to learn the peculiar type of movement It is a combination, as Dr Hunt has indicated, of various types of hyperkinesia There is something of the choreic, there is something of the tics, there is something of the athetosic One particular feature in these movements is a sudden, quick movement even quicker than most of the tics, that occurs occasionally Most of the movements are rather slow, but occasionally there is this sudden quick jerk, generally extensor This is a symptom which is so disconnected from all other organic movements that it is particularly valuable in the interpretation of this suppositious dissociation, because there is something there certainly more than dissociation, it is either an excess of impulse, or an absence or a great diminution of inhibition

Dr E W Haass, Detroit Dr Patrick has given a brief preliminary history of this boy whom I saw a little over two years ago, he then having been ill something over a year When I saw him first he was practically in this condition of helplessness Diagnosis had already been made by Dr Camp, who had been observing the patient for about six months before he was brought to me Previous to this there had been a diagnosis of hysteria and for a short time a diagnosis of beginning pseudohypertrophic paralysis A piece of the calf was taken for examination by Dr Camp with a finding of simple atrophy There is nothing in his family history His eye reflexes are normal, ocular movements are normal, the deep reflexes, as far as elicited (it is very difficult to get these reflexes) are apparently normal, the superficial reflexes are all present There are no sensory disturbances whatever, there are no electrical disturbances He has had a diagnosis of Wilson's disease since Dr Camp diagnosed the case But his mentality has not been affected at all Wilson's disease is a progressive lenticular deterioration plus mental deterioration plus a condition of biliary cirrhosis The hepatic disturbances, however, have never been determined, except on postmortem As far as we can ascertain the liver is normal in size and he responds entirely normally to the phenol tetrachlorphthalein test This spring he was subjected to this test and his liver is able to excrete dye in an entirely normal manner He is at rest during sleep His motions are very much exaggerated during excitement, as here at the present time and he has been in this condition of practical nonprogression now for a year and a half It began in his right leg and involves this extremity more than the left and, perhaps, his right arm more than his left The duration of the case is now about three years and three or four months

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[18] In addition to the references already given the following will be found of interest
Bonhoeffer Torsions Spasmus Neurol Centralbl 1913 xxxii 137
Beach Torsions Krampf Neurol Centralbl 1915 xxxiv 654

Dr A L Skoog, Kansas City, Mo Are there any restrictions to joint movements in the late stages

Dr James Ramsay Hunt, New York As to the diagnosis of this distressing condition, if one has seen a few cases it is generally pretty easy, certainly so far as the differentiation from hysteria or the spasmodic tics is concerned But even after I was fairly familiar with this disease, in the dystonia paraplegica I was uncertain as to the diagnosis for a considerable time The localization in this case was limited to the lower extremities, the involuntary movements were very slight, and it was difficult to distinguish between the torsion spasm and a spastic condition, although there was no clonus and the Babinski reflex was not present With the extension to the trunk and as the torsion quality of the movements became more evident, all diagnostic doubts were removed

In none of my cases was there any permanent fixation of the joints Strong passive movements were always sufficient to overcome any deformity resulting from the spasm I would also lay great stress on the absence of involvement of the face and muscles of articulation, in excluding the double athetosis The paradoxical phenomenon of dystonia, when present, I believe to be a pathognomonic symptom of this disease and an important differential sign in excluding other forms of muscular spasms Thus far I have encountered it only in advanced cases in the paralytic stage, it is then especially characteristic in the ankle and sometimes the wrist joint Apparently, the affection must reach an advanced stage before a complete reversal of the tonus innervation is possible It is very significant that we have here a disease which affects principally the muscles of the trunk and extremities It is not only an inability to dissociate tonus impulses to agonistic and antagonistic muscles, but there is also an absence of the normal inhibition or control The disturbance apparently results from the loss of a mechanism which is engaged in regulating and distributing tonus impulses to the voluntary muscular system

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Armies as Disease Carriers —There have been recorded many specific observations of the introduction or distribution of disease in the civil population by the movements of armies or return home of soldiers from a distant war The diffusion of typhus in Europe by the Napoleonic wars, the introduction of syphilis into Scotland by Cromwell's troops and into Sweden in 1762 by the Swedish troops returning from the Seven Years War, are examples During Napoleon's Egyptian campaign nearly every soldier out of an army of 32 000 men was affected by trachoma, and the return of these soldiers initiated a spread of the disease through almost all the European armies The great European epidemic of smallpox of 1871, especially notable in Germany, is believed to be associated with the Franco-Prussian War Clemow declares, indeed, that there is scarcely a war in ancient or modern times which does not furnish examples of the special distribution of disease —Military Selection and Race Deterioration by Vernon L Kellogg

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BACTERIOLOGIC FINDINGS IN CEREBROSPINAL FLUID IN POLIOMYELITIS

A PRELIMINARY REPORT OF THE EXAMINATION OF FIFTY CASES *

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It is the opinion of those familiar with the bacteriology of poliomyelitis that the cerebrospinal fluid, whether obtained by lumbar puncture during life or at necropsy, is sterile Throughout the literature there appear a number of brief reports on the isolation of diplococci and micrococci from human poliomyelitic cerebrospinal fluid, but these findings have until now been quite generally regarded as contaminations Indeed, in the reports of the most recent investigations in the bacteriology of this disease, Rosenow[1] says, "A peculiar polymorphous streptococcus has been isolated, often in large numbers, from abscesses in tonsils, from the blood during life in one instance, but *not* from the spinal fluid "

Recently we[2] reported the isolation of a gram-positive micrococcus from the cerebrospinal fluid during life in eight out of nine cases of acute poliomyelitis These findings have been extended, and the same peculiar gram-positive micro-organism has now been isolated from the spinal fluid in forty-five out of fifty cases studied It presents both the same cultural and morphologic characteristics as does the micrococcus isolated from the brains and spinal cords in fatal human cases at necropsy

Moreover, the same organism, when injected into monkeys, young lambs and rabbits either intraperitoneally, intravenously or intracerebrally, has produced flaccid paralyses of the extremities, and in a considerable number of the cases the typical histologic changes in the central nervous system which characterize the disease in man Paralysis has been readily produced by inoculation of cultures obtained from the human spinal fluid even in the fifth generation Subcultures two weeks old have produced paralysis of the extremities in the *Macacus rhesus* monkey The same micro-organism injected has been recovered in pure culture in nearly every instance both from the cerebrospinal fluid and from the central nervous system of the paralyzed animals at necropsy Furthermore, in special stained microscopic sections of the spinal cord and medulla of these paralyzed animals, this organism is visible in the gray matter, arranged chiefly in pairs but also in short chains

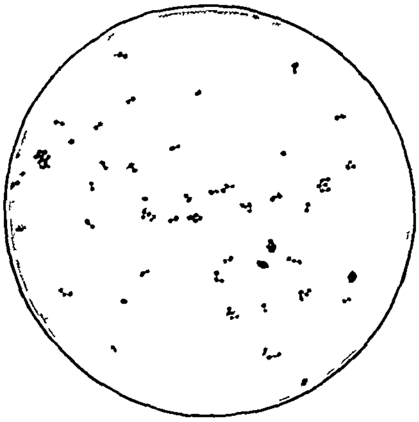

Fig 1 —The minute form of the micro organism as it appears in a twenty four hour ascites dextrose broth culture of human polio myelitic cerebrospinal fluid

Inoculations of young lambs, which apparently are especially susceptible to the disease, with a mixture of

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* From the pathologic laboratory of the Cook County Hospital

* This work has been very materially aided by a special grant made by President Peter Reinberg and the members of the Board of Commissioners of Cook County Ill

[1] Rosenow E C Towne E B and Wheeler G W The Etiology of Epidemic Poliomyelitis The Journal A M A Oct 21 1916 p 1202

[2] Nuzum J W and Herzog Maximilian Experimental Studies in the Etiology of Acute Epidemic Poliomyelitis The Journal A M A Oct 21 1916 p 1205

many different human cerebrospinal fluids not cultured, have so far given negative results

From a series of fifty cases of typical epidemic poliomyelitis in the Cook County Hospital, the cerebrospinal fluid was obtained by lumbar puncture during life under sterile conditions From 1 to 2 c c of the spinal fluid was regularly inoculated into a series of four tall tubes containing ascites dextrose broth, ascites broth, human ascitic fluid and ascites broth to which a sterile piece of rabbit's kidney was added Suitable controls were made in every case, and the tubes were incubated at 35 C (95 F) At the end of from twenty-four to thirty-six hours, a diffuse turbidity commonly appeared in all four tubes of the positive cultures The control tubes remained clear Smears made at this time usually revealed a minute micro-organism, gram-positive, and arranged in pairs, clumps and short chains Many were so minute as to be just visible under the oil immersion lens They corresponded in every morphologic detail to the minute globoid bodies described by Flexner and Noguchi[3] At the expiration of from forty-eight to seventy-two hours, a fine granular precipitate appeared along the sides of the test tubes, and with the settling of the whitish precipitate to the bottom of the tubes, the diffuse turbidity of the medium partially cleared up Smears of the cultures made at this time revealed a preponderance of the larger form of the same micrococcus Subcultures on glucose agar slants grew out rapidly into the larger forms of the organism

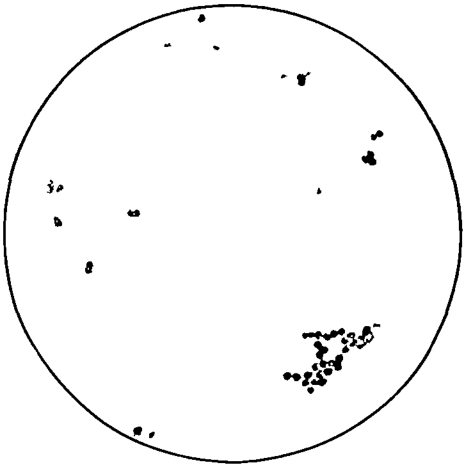

Fig 2—Relative size and arrangement of the micrococcus in a seventy two hour culture of human poliomyelitic cerebrospinal fluid

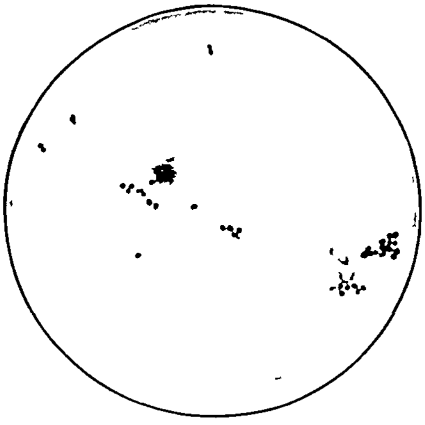

Fig 3—Stained smear of the sediment from human cerebrospinal fluid after prolonged centrifugalization The micro organism appears in the minute globoid form

Forty-five of the fifty cases (90 per cent) presenting the clinical picture of acute poliomyelitis yielded positive cultures with the spinal fluid In many of these cases lumbar puncture was performed from two to four times, and in each instance the spinal fluid was immediately inoculated into the cultural mediums and a pure culture of the organism was invariably obtained The same micrococcus was isolated in two cases from the cerebrospinal fluid within twenty-four hours after the onset of the acute fulminating type of the disease, attended in each instance by complete flaccid paralysis of all the extremities and rapid progressive paralysis of the respiratory muscles and death That the micro-organism is present in the spinal fluid for a considerable period of time after the onset of the paralysis is indicated by the fact that it was isolated in two cases fifty-nine and sixty days after the onset of the paralysis

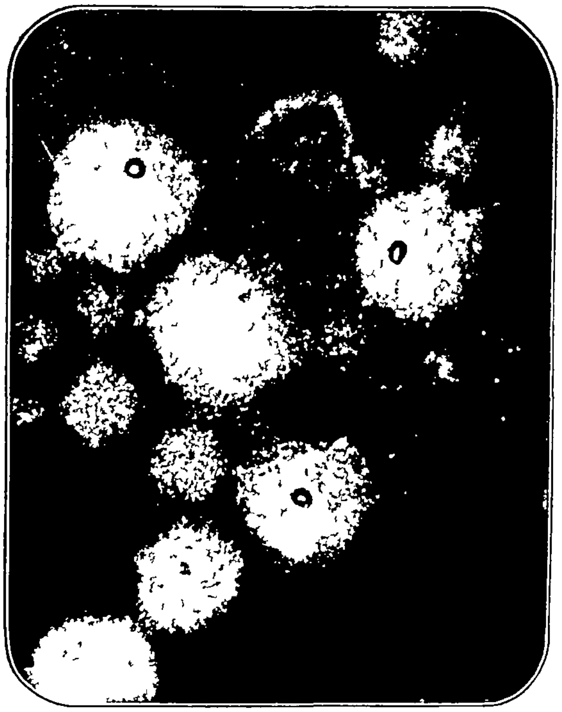

Fig 4—Appearance of twenty four hour colonies on blood agar plates inoculated with 1 c c of poliomyelitic cerebrospinal fluid

Control cultures were made with the cerebrospinal fluid obtained by lumbar puncture from normal individuals and with the spinal fluid of patients afflicted with diseases presenting more or less clinical similarity to infantile paralysis, such as brain tumors, tuberculous meningitis, hemiplegia, cerebral hemorrhage, tabes, tic, hydrocephalus, hysteria, and cerebral diplegia (Little's disease) These spinal fluids, when obtained under sterile conditions, were uniformly sterile In no case was the peculiar micro-organism characteristic of poliomyelitis obtained

It is admittedly difficult to diagnose many atypical cases of poliomyelitis, indeed, the diagnosis is usually made after the onset of the paralysis Accordingly, any routine clinical test would be of inestimable value in these cases It was hoped that complement fixation tests with the blood serums and the spinal fluids of poliomyelitic patients might prove a valuable aid in diagnosis Bacterial antigens were prepared from the cultures of the brains and spinal cords at necropsy With suitable controls complete hemolysis resulted in a large number of cases tested

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[3] Flexner Simon and Noguchi Hideyo Experiments on the Cultivation of the Micro Organism Causing Epidemic Poliomyelitis Jour Exper Med 1913 xviii 461

That the isolation of the organism from the spinal fluid may ultimately prove a valuable routine procedure in doubtful cases is evidenced by the following brief case histories

Case 1—N K boy, aged 2½ years, was brought to the hospital by the health department with the clinical diagnosis of acute poliomyelitis No past history was available except that the child had been vomiting and had had convulsions He also had a weakness of the right arm

Examination revealed a paresis of the right arm, and the child could not raise his right arm to his head There was definite weakness of the right deltoid muscle The pupils were unequal, the left larger than the right Choked disk was present in both eyes The lower limbs were spastic Knee jerks were absent

Oct 11, 1916, spinal puncture was performed and clear fluid obtained under markedly increased pressure, spurting from the needle Cultures of the spinal fluid were *sterile*

October 23 second culture of the spinal fluid was *sterile*

October 25, the child vomited several times, and had repeated convulsions

October 26, third culture of the spinal fluid was *sterile*

October 27 the child died

At necropsy, a huge gliosarcoma of the temperoparietal lobe of the left cerebral hemisphere was found involving the motor area of the cerebral cortex and approximately half of the entire left cerebral hemisphere of the brain

Case 2—M M a young white girl, aged 14 years admitted to the hospital Oct 17, 1916, with the clinical diagnosis of anterior poliomyelitis, for the past month had complained of headache dizziness and vomiting Previous to admission to the hospital she suddenly developed a paresis of the left forearm and speech disturbances

October 17, lumbar puncture was performed and clear spinal fluid removed under increased pressure Cultures of the spinal fluid, together with suitable controls, were all *sterile*

October 18, the patient became suddenly comatose and died At necropsy a sarcoma of the brain stem (medulla oblongata) with area of recent hemorrhage within the tumor mass was found

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Disease and War—At the time of the crusade against the heretics a serious pestilence broke out in Egypt in the army of the crusaders which had already on Aug 12, 1218, suffered from dysentery, it appeared in December during the siege of Damietta after a heavy and continuous downfall of rain 'The patients" says Wilken, were suddenly seized with violent pains in the feet and ankles, their gums became swollen their teeth loose and useless while their hips and shin bones first turned black and then putrefied Finally an easy and peaceful death like a gentle sleep put an end to their sufferings A sixth of the pilgrim army was carried away by this disease which no medicine could cure ' Only a few patients who survived the winter were helped to recovery by the warmth of spring It was unquestionably a severe form of scurvy The besieged too, suffered from the destructive pestilence and also from Egyptian ophthalmia We read further in Wilken A horrible sight greeted the pilgrims when they took possession of Damietta Not only the houses but even the streets were filled with unburied corpses, in the beds dead bodies lay beside helpless and dying invalids and the infection of the air was intolerable Of 80 000 inhabitants which the city had had at the beginning of the siege only 3 000 were left while only 100 of these were healthy ' Other reports say that 10 000 inhabitants survived—Friedrich Prinzing Epidemics Resulting from Wars

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THE THERAPEUTIC RESEARCH COMMITTEE

OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION *

TORALD SOLLMANN, M D
CLEVELAND

The Council on Pharmacy and Chemistry might well have taken for its motto, "More light " In its endeavor to introduce light into the darker places of medicine, it founded its Committee on Therapeutic Research It was hoped that the existence of this committee, and the funds placed at its disposal by the Trustees of the American Medical Association, would help to focus the attention of experimental and clinical investigators on some of the urgent but neglected problems of practical therapeutics, and help to bridge the chasm between science and its application

The results of the work done under the auspices of this committee, during the four years of its existence, appear to demonstrate that this hope was not unfounded As results are the best explanation and justification of the work of the committee, and the best means of extending its usefulness, I was very glad to comply with the invitation of your chairman to present a summary of these results I shall arrange these by years

RESULTS IN 1912

In the first year a good deal of work was naturally devoted to organization The committee, from the outset, adopted the policy of distributing its funds over a number of institutions which promised to take up the desired problems, rather than to concentrate on one place Similarly, it has generally followed the policy of making a larger number of relatively small grants to a number of different lines of investigation, rather than to concentrate its funds on a few pieces of work The underlying idea in this was, that the function of the committee would be to act as a stimulus or ferment

Investigations were published on the following subjects

Natural and Synthetic Salicylates—A superstition had arisen in the medical profession, mainly fostered by interested manufacturers, that the expensive so-called "natural" salicylates were more active and especially safer than "synthetic" salicylates This matter was investigated experimentally by J A Waddell, and the literature was analyzed by Eggleston Both lines showed conclusively that no basis whatever exists for the asserted difference It was justifiable, therefore, to proceed with clinical trials, which will be mentioned later

Duration of Digitalis Action—The existing uncertainty as to the subject interferes greatly with safe and effective digitalis therapy On the one hand, toxic phenomena are often elicited by those who undervalue the persistence of digitalis action and its influence on subsequent administrations On the other hand, excessive fear of cumulative effects has deprived many a patient of the benefits of adequate dosage The great differences which exist in empiric rules on this subject illustrate sufficiently the want of accurate knowledge The problem can be solved only by exact experimental and clinical investigation Observations on the subject were published by R A Hatcher and Cary Eggleston

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* Read before the Section on Pharmacology and Therapeutics at the Sixty Seventh Annual Session of the American Medical Association, Detroit June 1916

Intestinal Antiseptics—While the importance of intestinal putrefaction may sometimes be overestimated, there can be no doubt that it is at least a very serious complicating factor in disease Its control would be highly desirable This may be done to some degree by diet and cathartics, but to what degree is open to question That these measures are not entirely satisfactory and adequate is shown by the great demand for intestinal antiseptics However, the use of such antiseptics can do nothing but harm unless they are actually efficient The views of physicians as to the usefulness of these antiseptics vary widely, both clinical and laboratory investigations having led to rather contradictory results Dr N M Harris therefore took up the investigation of current methods for estimating intestinal putrefaction This was an indispensable preliminary before any direct work could be undertaken Unfortunately, the results showed that all of the methods so far used are unreliable, and therefore, the data based on them are without value In consequence, research energy need no longer be misdirected along these useless lines, but future investigators must concentrate their energies on finding methods adapted to the solution of this preliminary problem Until this is done, chemical disinfection of the intestinal tract cannot be on a scientific footing

Iodids on the Circulation—The extensive use of iodids in circulatory disorders indicates that they have great value, but since the mechanism of their action is not known, their field of usefulness cannot be defined In many cases, their efficiency cannot be predicted, and since results are slow, their empiric trial, in each patient, is a tedious procedure, sometimes dangerous, directly, and indirectly by delaying other treatment It would be highly useful, therefore, to gain some insight into the mechanism of their action Before this could be started, a critical survey of the existing literature was necessary This was done by Dr J A Capps It brought out the fact that attempts at explanation have so far been unsuccessful It also showed that the most promising direction for future investigation is along a different line, namely, by concentrating on the syphilitic factor in circulatory affections

Organic Iodin Preparations—Recent years have witnessed the introduction of a considerable number of organic iodin compounds, generally with the claim that they were more efficient than other forms, but less liable to iodism This prompted an investigation of the pharmacologic and therapeutic value of these compounds, which was undertaken by Dr F C McLean His work was concerned mainly with the distribution and form of the iodin in different cells It showed that some of these compounds were rapidly changed into inorganic iodid, and therefore did not differ materially from the latter Other forms, particularly the fatty compounds, have a somewhat different distribution, so that their actions might show minor differences Whether or not these differences are therapeutically useful is a subject for further clinical investigation

RESULTS IN 1913

Clinical Statistics on Salicylate Toxicity—The salicylate studies started in 1912, were continued Dr Hanzlik made a thorough statistical study of the therapeutic, so-called "toxic dose" of sodium salicylate, and of the conditions which affect this This furnished a basis for comparison of other data

To settle finally the question of the comparative effects of natural and synthetic salicylate, the Council undertook a collaborative clinical investigation In this, samples of natural and synthetic sodium salicylate were sent to different clinicians, the samples being unlabeled, and the collaborators being asked to report whether they could distinguish any difference between the samples, and if not, to report the results objectively The collected results were tabulated by Dr A W Hewlett These showed conclusively that the two products were absolutely indistinguishable in their effects, so that there is no longer any reason for preferring the expensive natural to the inexpensive synthetic product

In connection with this work, Dr W S Hilpert also investigated the purity of commercial sodium salicylate He found that the cheapest brands complied fully with the pharmacopeial requirements, so that the fear of impurities need not be entertained

One of the salicyl-esters, salicyl-salicylic acid, was being marketed with the claim of being nontoxic This claim was investigated by Dr J McLachlan His results showed that this claim, like similar ones made for other products, was unfounded, toxicity and efficiency going practically hand in hand in all salicyl compounds As a result of this investigation, the claim was withdrawn by the manufacturer

Interaction of Ferments—The extensive use of certain digestive elixirs, claiming to contain pepsin and trypsin, prompted a renewed and thorough investigation of the stability of such preparations This was undertaken by Dr J H Long and W A Johnson Their results showed that much of the older work was unreliable, through the use of faulty methods It confirmed, however, that trypsin is very much weakened in the presence of acid and pepsin, while the pepsin is not changed in neutral solutions of trypsin Furthermore, watery solutions of trypsin deteriorate more or less rapidly, even in the absence of pepsin

Action of Bromids—Dr C W Green and T K Kruse investigated the action of inorganic bromids on the circulation, as a part of an extensive investigation of bromid action They found that the hearts of warm blooded animals are depressed, but many of the so-called bromid effects are chargeable to the bases with which the bromid has been combined

Hexamethylenamin—The undoubted efficiency of this substance as a urinary antiseptic has led to its extensive trial in other conditions, but without any very definite basis Drs P J Hanzlik and R J Collins therefore investigated the conditions under which formaldehyd is liberated They showed in the first place that hexamethylenamin itself is not at all antiseptic, so that its efficiency depends entirely on the liberation of formaldehyd Many of the tests formerly employed did not distinguish between the base and the liberated formaldehyd, and therefore led to faulty conclusions By the use of the phloroglucin test it was shown that the liberation depends entirely on the acidity of the solution, being absent if the solution is even faintly alkaline This law applies to pathologic fluids as well as to watery solutions

The distribution of hexamethylenamin was investigated It was found to be present in all tissues and body fluids in which it was sought, but formaldehyd was liberated only in acid urine, and in the acid gastric content The liberation in the urine was facilitated by rendering this more acid by monosodium phosphate, and inhibited by the administration of alkalies

RESULTS IN 1914

Hexamethylenamin Studies—Dr P J Hanzlik continued this work on various pathologic fluids The results confirm that the liberation of free formaldehyd obeys strictly the same laws as in physiologic fluids and watery solutions, depending solely on the free acidity

Mutual Action of Certain Digestive Ferments—This was further investigated by Dr J H Long and G W Muhleman It included the action of hydrochloric acid and pepsin on amylopsin, and the action of hydrochloric acid and pepsin on trypsin, further confirming the incompatibilities The investigations showed also that samples of pancreatin, even when dry, deteriorate gradually on the shelf, and are liable to be very low in tryptic as well as in starch digesting power This throws further doubt on the usefulness of pancreatin preparations

Studies in Cardiac Stimulants—The extensive use of such drugs as strychnin and caffein in circulatory collapse made it advisable to subject them to a thorough clinical study by modern methods The tendency of the literature of recent years has been rather to discredit their efficiency Two series of investigations were undertaken, one by Dr W P Lucas, the other by Dr L H Newburgh

Lucas observed the effects particularly on children with endocarditis occurring in the course of rheumatic fever It was found that for these, the usual doses of strychnin and caffein were of no value Positive effects were obtained only when much larger doses were employed and even here the effects were very short It is also questionable whether these effects would be at all beneficial The respiratory actions were likewise so small and uncertain as to be negligible

Newburgh made a study of the blood pressure in pneumonia He found that, contrary to the ordinary opinion, the vasomotor mechanism is practically intact Neither strychnin nor caffein in the conventional doses had any stimulating effect on the cardiovascular apparatus

Both series of investigations agree that the use of strychnin, and the ordinary doses of caffein, in low circulation does not rest on any sound basis While this must be disappointing to the many physicians who have placed faith in strychnin, it is much better to know that the drug does not deserve confidence, so that other measures may be tried out

Proteolytic Activity of Pancreas Preparations—Drs J H Long and A W Barton made a comparative investigation on methods They found that the commonly used methods give rather different results, varying for different preparations The paper should lead to more rational usage in stating the strength of trypsin products

Organic Iodin Preparations—This subject is further discussed by Dr F C McLean He concludes that all of these preparations owe their activity to the iodin after its separation from the molecule The rate of this liberation has some influence on their therapeutic usefulness For instance, if a slow but prolonged effect is desired, the iodin compounds of fats and fatty acids would have some advantage, they would have no advantage when a high concentration of iodid in the tissues is desirable The iodized proteins break up so readily that their systemic actions would not be different from inorganic iodid, they may cause less local gastric irritation

Caffein in Myocardial Insufficiency—In marked contrast to the inefficiency of this drug in circulatory collapse and infectious diseases are the results obtained by Dr L Taylor in myocardial insufficiency with retained body fluid Full doses of the drug caused a distinct increase of urine output, with improvement in the circulatory condition Caffein itself in these doses, however, produces distressing nervous and gastric symptoms This can be largely avoided by the use of theobromin sodium salicylate, which is clinically superior in every respect

Literature of Salicylates—Information concerning the various actions of these important drugs is widely scattered through the journals, so that it is very difficult for one who intends to take up any special feature of this subject to obtain a comprehensive idea of what has been done To make this literature more accessible, Dr P J Hanzlik prepared a critical synopsis of practically the entire salicylate literature

RESULTS IN 1915

American Liquid Petrolatums—A collective investigation was made of their availability in comparison with the imported The investigation, which was collated by Dr W A Bastedo, settled quite conclusively this much disputed question, showing that all pure American oils are therapeutically equivalent to the imported brands

Synergism of Opium Alkaloids—A lengthy and comprehensive investigation has been conducted by Dr D I Macht, on the one hand to settle the question of the differences between opium and morphin, and on the other hand to aid in deciding how far the claims for various proprietary products are justified This investigation is not entirely complete So far it has shown that the minor opium alkaloids do play a distinct rôle, which may be advantageous, but that the older claims for the proprietary preparations require considerable revision

Synergism of Morphin and Scopolamin—This has been investigated by Dr H G Barbour, with special reference to the use of these alkaloids in obstetrics This showed that no direct action is exerted on the uterine muscle, so that this factor at least need not be further considered A search is being made for other substances that could be combined with morphin

The Clinical Actions of Veratrum—This drug had rather passed out of use, but since it produces very distinct actions, it is quite possible that it may have an important therapeutic field Its therapeutic uses can be decided only by extensive and exact investigations, which are now being conducted by Dr R J Collins

Physiologic Activity of Combined Hydrochloric Acid—The relative activity of free and loosely combined hydrochloric acid has important therapeutic bearings This formed the subject of an investigation by Dr J H Long

Stability of Digitalis Infusions—Many physicians still believe that the infusion is the most active preparation of this drug, but are deterred from its employment by the fear of rapid deterioration This need no longer be entertained, for Drs R A Hatcher and Cary Eggleston have demonstrated that the infusion does not lose in activity under ordinary conditions, during a considerable time

Toxicity of Chloroform—Various accidents of anesthesia suggested differences in the toxicity of the different samples of chloroform, perhaps according to their origin Experiments by Dr W Hale indicate, as far as they go, that this suspicion is not justified

RESULTS IN 1916

In the first three months of the year, the following papers have been published

Fate of Hypophosphites—The use of hypophosphites is an illustration of the survival of the application of a theory, after the theory itself has entirely disappeared The history and literature of the subject are reviewed by Dr W M Marriott This shows that there has never been any real evidence of their usefulness, any apparent benefits being undoubtedly attributable to the measures with which they are always associated It is high time, therefore, that they should be discarded from scientific medicine

Epinephrin in Pituitary Extracts—W C Crawford has demonstrated the presence of epinephrin or a similar substance, accounting partly for the depressor effect of these extracts

Uric Acid Solvents—Dr H D Haskins has investigated the influence of the administration of various substances on the solubility of uric acid in the urine As might be expected, he found that the alkalinity of the urine was the most powerful factor While the particular alkali made minor quantitative differences, sodium bicarbonate did all that could be accomplished by any alkali The literature of urate solvents was further reviewed by Dr P J Hanzlik

Strontium Salicylate—Interested manufacturers have long claimed a superiority of strontium over other salts These claims were partly supported by rather loose statements in the textbooks, but had no very good foundation The question was tested on the salicylates by Dr M A Blankenhorn The results showed that the claimed superiority is entirely fallacious, there being no difference between strontium and sodium salicylate

A number of other problems are under way, some nearly ready for publication Still more, of course, are to be solved The committee will be glad to give suggestions to any one who wishes to cooperate in this wide and extremely useful field

ABSTRACT OF DISCUSSION

Dr F E Stewart, Philadelphia The producers of bacterial vaccines met in New York last Monday and extended the date of expiration for their products from one year to one and one-half years I have no criticism to make on this, and presume it is all right, but I would suggest that the Council take up for investigation the keeping powers of bacterial vaccines I am frequently asked for information on this subject but I do not know of any satisfactory experimental data warranting an opinion An investigation of this kind would be of much value to all concerned, including the producers, the medical profession, and the public

Mr. Frederick I Lackenbach, San Francisco It is this phase of the Council s work which has always appealed to me most strongly, namely, the constructive work In editing the reports of the Council in the *California State Journal of Medicine* I have generally put these matters first—this constructive work—and frequently omitted the work of the Council pertaining to obscure proprietary preparations, since these frequently were only of passing or local interest and not read by our physicians Physicians in many instances never have heard of these proprietary medicines which were to take up valuable space in our journal Only matters were discussed which might be of general interest to physicians It is of interest to every physician, for example, to know that the hypophosphites are of no appreciable value I have taken this matter up with Dr Puckner in my correspondence It is this constructive work of the Council that has given it the recognition that it has at home and abroad I for one would rather see more constructive work done by the Council and less of the critical work on proprietary preparations

Dr I J Moyer, Pittsburgh This paper agrees with my experience with the drugs and corresponds closely with my clinical experience and I wish to go further in the investigation of some of the drugs, especially caffein We know that in failure of compensation it is of great value There is just one point in regard to the abolition of the hypophosphites In tuberculosis or just preceding the onset of this disease there is a large amount of waste of the phosphates and calcium and calcium phosphate and this renders the person more susceptible to the disease If we can supplant this and supply the calcium salts it will support the organism and replace the loss of the calcium salt and it seems to me that it is worthy of trial and investigation

Dr O T Osborne, New Haven, Conn I do not know of any proof that calcium hypophosphite becomes anything else in the body than calcium hypophosphite I agree that the body needs calcium in this condition, but it must get it in some other way As to Mr Lackenbach, I take decided issue with him I believe constructive work is valuable but destructive work is equally as valuable in the drug line We are still in the realms of superstition and if we do not wash off from our books the obsolete drugs and preparations the same as we have these hypophosphites, then we do not accomplish very much with the larger medical fraternity The investigations of the actions and limitations of the active drugs is bound to go on, but I believe there is a larger field for the work of the Council in showing that many of the proprietaries are mixtures of more or less useless drugs If one goes through these mixtures with a red pencil he will find that it is a minute portion of an iodid, for instance, or a small amount of salicylic acid, that is doing the work and the rest is nonsense I believe the only official way to show this fact is through the American Medical Association

Dr Torald Sollmann, Cleveland There are many preparations that the Council considers it a waste of time to take up, at the same time it aims to cover the entire field of advertised proprietaries so that the physician can find the opinion of the Council on them *This is the reason for a great deal of this* condemnatory work

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THE TREATMENT BY RADIUM OF CARCINOMA OF THE PROSTATE AND BLADDER

PRELIMINARY REPORT *

BENJAMIN S BARRINGER, M D
Assistant Attending Surgeon Memorial Hospital
NEW YORK

In October, 1915, at the Memorial Hospital, we began treatment by radium of cases of carcinoma of the prostate and bladder At this early date obviously no final results of our treatment can be predicted In certain cases, however, our primary results have been good This, together with the fact that the technic of the application of the radium, particularly in prostate carcinomas, is new, encourages us to give this report

Problems presented by bladder and prostate carcinomas are so entirely different that they will be considered separately

CARCINOMA OF THE BLADDER

The cases considered in this paper are not papillomas which may have undergone at one place or another carcinomatous degeneration, but rather flat sessile tumors, sometimes cauliflower, sometimes hard, sometimes multiple, generally sloughy in part The cystoscopic picture or the rectal feel may suggest an indurated base Microscopically they show carcinoma Fulguration does not particularly affect this tumor

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* From the Service of the Memorial Hospital

* Read before the American Association of Genito Urinary Surgeons Washington D C May 9 1916

Technic of Using Radium—There are a number of different facts connected with these tumors which have determined our method of treatment

1 These patients often have a great deal of pain both connected with and between urinations We have tried not to increase their pain and discomfort, in other words, if we do not succeed in curing, we can at least say that we have not made them materially worse We have not been altogether successful in this The extent of the carcinoma, the presence of urinary retention, the involvement of the prostatic urethra, and other factors, seem to make it more or less impossible to determine accurately the amount of pain a patient will have from radium treatment

2 In the first case in which we used radium, the bladder was opened suprapubically and the radium attached by hooks to the tumor It took this man nearly three months to get out of the hospital He had sloughs in his suprapubic wound for a long time and his physical condition at present is the worst of any of the patients treated For this reason I have at least temporarily given up this method

3 I believe that the problem of destroying carcinoma of the bladder by radium is, in most cases, largely one of accuracy in applying the radium to the growth This has been the experience of those who have used radium treatment in uterine carcinoma Therefore we have not used irradiation by means of rectal tubes or suprapubic application, but have tried to place the radium on the growth in the bladder I have tried to use the radium in such quantities and over such periods of time that undue sloughing and burning of the normal portion of the bladder will not result

The method which I use at present is as follows

From 100 to 200 millicuries of radium screened with 0 6 mm of silver and 1 5 mm of rubber are put up so as to form a capsule about 1 inch long and one-eighth inch in diameter, to this is attached a long stout double linen thread A direct cystoscope is introduced into the bladder, the capsule put through its sheath and the cystoscope withdrawn, leaving the radium in the bladder The linen thread attached to the tube runs through the urethra and appears at the meatus In women one may reintroduce a small cystoscope and see if the radium lies on the tumor The patient remains in bed during the application This perhaps is a crude and inaccurate way of applying the radium On the other hand, a large majority of bladder carcinomas are in the base, and the tube of radium cannot be very far from a carcinoma in this position, certainly much nearer than a rectal or suprapubic tube would be If the carcinoma is located on one side of the bladder, the patient is told to turn slightly toward that side while the radium is applied The patients generally have been able to urinate without trouble during the application Some have held their urine until the end of the irradiation, at most eight hours, and then urinated or were catheterized after the radium was removed The urine possibly to some extent screens the vault of the bladder (all of my patients to date have had carcinoma of the base) and also lifts the bladder mucous membrane of the vault away from the radium Whatever may be the reason, the normal bladder mucous membrane seems very resistant to radium burns when the radium is used in this way

Duration of Radium Burns—There is much variation in the effect of any given dose of radium The radium does not, as a rule, change the appearance of the tumor, that is, a red cauliflower tumor generally remains red after the radium burn, but it appears to be softer, and fulguration of the tumor has a much greater effect than before the irradiation On the other hand, sloughing sometimes occurs and persists even for a number of months My rule is not to reapply radium until a patient has entirely recovered from the effects of the first application

Dangers of the Use of Radium—I have lately heard of one case in which radium was used, quantity, time or screening not known, in which the patient some two and one-half months after the irradiation died of a ruptured bladder This case emphasizes the fact that if the tumor is at all extensive it is very difficult by the cystoscope to tell exactly the amount of bladder involved Cystographs may help some It is possible that further experience will indicate that, in extensive carcinomas, we should do a suprapubic observation of the exterior of the bladder If we find that the carcinoma has penetrated the bladder, radium treatment is probably both useless and dangerous

REPORT OF BLADDER CASES

Nine bladder tumors have been irradiated

Extent of Growth—In one of these cases the growth was absolutely inoperable In another case the growth should be classed as a prostatic carcinoma with secondary invasion of the bladder In five other cases the extent of the growth indicated that total cystectomy would have been the only operation to offer anything In another case partial cystectomy, with the reimplantation of the left ureter, would have been possible, while in another the growth itself possibly could have been removed

Microscopic Examination—In six of the nine cases the diagnosis of carcinoma has been confirmed by the microscopic examination of pieces taken from the growth I believe that in all cases the diagnosis must be confirmed by the microscope But when once confirmed the cystoscopy and the rectal feel give us much more trustworthy data as to the extent of the tumor and the prognosis in a given case than does the microscope

Result of Treatment—One patient died three months after irradiation This patient had an extensive inoperable carcinoma of the bladder base, three patients have been too recently treated to make any report Another patient is definitely getting worse This is the patient in whose case the radium was applied through the suprapubic opening in October, 1915 I have never been able to examine this patient with the cystoscope to see the effect of the radium on the bladder, but he is losing weight and having more frequent and more painful urination In two other cases the symptoms are about the same, and the patient's general condition is slightly improved, but the carcinoma still persists One of these was treated with radium about three months ago, and the other was treated several times, beginning in October, 1915 In two of the nine cases the growth has disappeared One has only recently been examined cystoscopically, notwithstanding the radium was applied in February, 1916 In the other the growth has been absent (by cystoscopic examination) for three months These last two cases are of enough interest to report in some detail

Case 1—C T, man aged 59, came to Dr Keyes in January, 1916, and stated that since June, 1915, he had had occasional attacks of painless hematuria In July, there had been two bloody emissions, though he had been impotent for ten years At that time a papilloma was found, and since then he has been fulgurated four times—October 22, November 1, December 9, and January 11 Because of the return of the growth it is suspected to be carcinoma Dr Keyes reports a sloughy ulcer about the left ureteral orifice with definitely carcinomatous looking lumps in the edge A piece was removed which Dr Ewing reports as diffuse carcinoma, and the growth was burned again with the high frequency current Three weeks later, 214 millicuries of screened radium were left in the bladder for seven hours After the irradiation the patient went to his home and had various ups and downs, an attack of grip, etc Three days after the irradiation and for a period of two weeks, he arose five to six times at night to urinate, but had no special burning on urination From that time on the frequency has diminished He was examined cystoscopically, May 2, 1916, at which time no trace of the original tumor could be detected The entire bladder was slightly congested, and there were a few bullae about the bladder orifice He is the picture of health, and there is no hardness felt in the prostate or the base of the bladder

Case 2—C A G, woman, aged 69, had painful and frequent urination for one year, three or four times at night and by day every three to four hours She has been passing bloody urine for some time She was examined cystoscopically some months before I saw her, and a diagnosis made of inoperable carcinoma of the bladder Cystoscopy revealed a large red cauliflower tumor with small necrotic areas on the left side of the bladder base I had some difficulty in determining its full extent It probably was as large as half a dollar and sessile It was directly over the left ureteral orifice, which could not be seen Dr Ewing reports carcinoma I burned the tumor twice with high frequency current but this had little or no effect on it and I considered it useless to continue January 4, I put 100 millicuries of screened radium in the bladder and left it in eight hours The patient went out of town the next day and at the end of three days had severe bladder pain with increased urinary frequency so that she urinated every hour Two days later she was absolutely normal as to pain and urinary frequency

February 4, cystoscopy revealed that the tumor was gone The ureter was in plain sight and covered with normal mucous membrane The patient had a little pedunculated papilloma of the bladder neck which was burned Dr Keyes confirmed my examination April 28 cystoscopy revealed that there was still no tumor She had a slight cystitis (caused by retention of urine due to a cystocele)

Whether the carcinoma in these cases will return or not, no one can say I believe that the fact they have reacted so quickly to radium may indicate that we have eradicated the growth Only time will tell, however

CARCINOMA OF THE BLADDER

The problem involved in the diagnosis and treatment of carcinoma of the prostate is different from that of carcinoma of the bladder In the first place is the difficulty in diagnosis An extensive carcinoma which runs up into the vesicles can usually be exactly and positively diagnosed by palpation On the other hand, a carcinoma as extensive as this is probably beyond the hope of cure If the carcinoma, as far as can be determined by palpation, is confined to the limits of the prostate, then the diagnosis by palpation alone is sometimes not only difficult, but impossible

In a recent case which I treated with radium there were two positive diagnoses, including my own, which was possibly biased, one of "very suspicious," one of merely "suspicious" and two indeterminate As Geraghty has pointed out, palpation of the median lobe on a sound introduced into the urethra is of assistance It has been suggested that enough of the prostate for microscopic diagnosis can be obtained by the introduction of a trocar through the perineum into the suspected prostate In one of my cases part of a carcinomatous lobe was removed and the diagnosis made from this Such a procedure, however, is not ideal, as it might make the carcinoma grow more rapidly If one treats cases which one is sure are carcinomas of the prostate, but in which a microscopic diagnosis has not been made, and makes such patients temporarily or permanently better, one will, of course, run a risk of dealing with cases which were not carcinomatous

Treatment—The operation after Legueu, Young and others apparently succeeds in curing the disease in a certain number of cases The operative mortality is probably between 10 and 20 per cent, and the cured cases very few Aside from the mortality, one objection to the operation is the fact that many patients are left with partial or complete incontinence Because the results of an operation are unsatisfactory, radium has been employed in attempts to destroy the growth Irradiation has been both rectal and urethral Pasteur and Degras[1] report a number of cases in which the radium in the prostatic urethra or bladder gave a marked diminution of the size of the prostate and a decided improvement in symptoms One patient three and one-half years after treatment by radium was in excellent health, with a small regular movable prostate and clear urine This carcinoma had extended through into the bladder Geraghty, applying radium by way of the urethra, has been able to relieve the symptoms of frequent urination, tenesmus, etc, in a number of cases, but has been unable to cause any appreciable diminution in the size of the carcinoma

Technic of Application of Radium—Because the carcinoma starts in the interior of the prostate gland, and radium by urethra or rectum often causes intense irritation, I have applied the radium differently A needle 4½ inches long and about 18 gage has been used From 50 to 100 millicuries of radium have been placed in the end of this needle for a distance varying between ¾ inch to 1½ inches according to the indications of the individual case The patient is placed in a lithotomy position, a finger introduced into the rectum and the perineum between the urethra and rectum is anesthetized with novocain (1 per cent) I have frequently inserted the needle without anesthetization, causing very little pain The radium needle is then plunged into the perineum between the urethra and rectum, and, guided by the rectal finger, the end of the needle is passed into the middle of one or the other of the carcinomatous lobes[2] After the needle is introduced, the patient frequently does not feel its presence The needle is left in place from four to six hours If one wishes to irradiate the other lobe, the needle is pulled out of the first lobe and introduced into the second and left there the proper time The ease of this procedure is obvious I was nearly dissuaded from using this method by reports of necrosis following the use of unscreened radium I have now used the needles in the prostate fifteen times, and to date have had no radium sloughs These patients are apt to have burning and pain beginning the week after the radium is used and lasting for from one to two weeks During this time the prostate swells, and the maximum effect of the radium on the growth is not to be looked for until two or three months Some patients, notably those with the carcinoma extending into the vesicles, have a great deal of pain Neither the pain, however, nor the urinary disturbance are as great as when the radium is used in the bladder And curiously enough, radium in the urethra seems to cause or increase an already present residual urine, while this needle method, ,as far as I have observed, does not There is a certain class of borderland cases in which the carcinoma has broken through into the bladder neck and in which it is a question whether to use the prostate needles or the screened radium in the bladder neck I think these cases should be started with prostate needles, as the reaction is often little or nothing

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[1] Pasteur and Degras Radium in Cancer of the Prostate Jour d urol September 1913

[2] The needle in the prostate also serves to exclude prostatic stone the one condition hard to differentiate from carcinoma

REPORT OF CASES

Extent of Lesion—Five patients have been treated by the needle method[3] In but one of these cases was a specimen obtained for pathologic examination In this case the bladder was opened suprapubically, and one lobe of the prostate removed and found to be carcinomatous In two of the cases there was very extensive carcinoma of the prostate with involvement of the vesicles In another case there was but little involvement of the vesicles, but a large hard irregular unmistakable carcinomatous prostate In the fifth case there was a doubt of the diagnosis Dr Keyes and I thought it to be carcinoma Another surgeon said that it was "very suspicious," still another "suspicious," and two refused to give an opinion

Number of Treatments—In one case I inserted the needle four different times, in the four other cases I used the needle only once The largest dose of radium that I have used in a needle is 102 millicuries for four and one-half hours in one lobe, and the same needle was changed to the other lobe, and remained there four hours I have never seen a slough from the use of the needle, although I prefer to begin with small doses at first, from 50 to 75 millicuries for six hours

Results of Treatment—One patient died two months after the irradiation He had an extensive carcinoma of the prostate and vesicles The immediate cause of his death I do not know One of the patients has been too recently irradiated to determine the result The other three patients have all improved symptomatically

One who was irradiated in December 1915 directly after suprapubic exploration (by another surgeon) I have been unable to reach to examine I have heard indirectly, however, that he is up and doing a good day s work This is all I know about him

The second, a possible borderland case, was treated Feb 8 1916 He had just before the irradiation an acute retention of urine For six months prior to this he had a night urinary frequency (from two to four times) The radium needle caused absolutely no pain and no urinary disturbance When seen May 3, 1916 his prostate was considerably reduced in size He had gained a few pounds in weight, he had no night frequency and was doing a full day s work During this time he had no urethral instrumentation

The last patient is decidedly better symptomatically, and his prostate is so much reduced that if I did not know his history I would have much difficulty in convincing myself that he had any carcinoma He was first seen in November, 1915 He gave a history of night urinary frequency of from six to eight times for four months, and some pain running down his right thigh for five years There had been no erections for one and one-half years He weighed 116 pounds He had lost about twenty pounds Both lobes of the prostate were large, irregular, stony, hard, with slight extension up toward the vesicles The prostate was so hard that the possibility of prostatic stones was thought of A roentgenogram excluded this He had no residual urine Radium was used in November, 1915 A month later he reported that he had a number of vigorous erections which "gave him hope" The prostate at that time was at a maximum swelling January 14, the weight was 126 The prostate was much reduced Dr Keyes said "It is more the slight irregularity of the prostate than anything else that suggests carcinoma"

I again irradiated the patient, January 18 February 7, he was not up at all at night He weighed 132¾ pounds February 22, I irradiated again April 4, I irradiated once again When last seen, April 21, his frequency had gone from none at all at night to twice at night because of the radium of April 4 He has a small hard lump in the left lobe and a narrow hard ridge along the outer margin of the right lobe The prostate is very flat This man has gained about 16 pounds in weight From getting up at night six or eight times, he has had a long period just before the last radium burn of getting up not at all at night His prostate is markedly reduced in size, but I believe still has carcinoma in it For six months his carcinoma and the symptoms caused by it have markedly regressed

SUMMARY

By means of radium we have caused the rapid and complete disappearance of two bladder carcinomas out of nine treated These cases were carcinomatous by cystoscopic appearance and microscopic examination Time only will tell whether these patients are cured

In one case of prostatic carcinoma, treated for six months, the carcinoma and the symptoms have markedly regressed In another case, treated three months (possibly borderland) the symptoms have improved Of three other patients treated, one is dead, one has only recently been treated, and one is doing a full day's work but could not be reached for examination

It has been possible to carry out this work because of the cooperation of three men Dr Janeway has given valuable advice as the radium expert of the hospital, Dr Keyes has very generously contributed advice, corroborating examinations, and material, while Dr Ewing has suggested ways and means and made all the pathologic examinations My grateful thanks are due to these three

109 East Thirty-Fourth Street

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[3] A sixth patient was treated by radium inserted in the rectum In this case there was considerable irritability and urinary retention and the patient finally died uremic I have not included him in the foregoing series

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Separation of Buttocks—Occasions arise in which the examination of the anus or the contiguous skin is necessary, or some minor operation of the area is indicated, but when, unfortunately, the patient objects to a third person (assistant) At times, as in private homes, assistance on similar occasions is lacking Being confronted with such a case (the removal of a small external hemorrhoid), I was much annoyed by the falling together of large, soft flabby buttocks This disadvantage was quickly overcome by the simple expedient of applying a 2 inch strip of surgical adhesive plaster to each buttock and by a bandage which united the ends in front, pulling the buttocks apart The adhesive strips are applied about an inch from the anus transversely to the axis of the body and closely attached to the skin for, say, 6 inches It is a great relief to the operator to witness how easily the buttocks are separated by this means and what an excellent field this simple method provides It is painless, quick, cheap efficient and, best of all, may be applied at any time or place when a roll of adhesive is available—John C Silliman, M D, Palo Alto, Calif

New Instruments and Suggestions

RED MERCURIC IODID, A PHARMACEUTICALLY "SOLUBLE," THERAPEUTICALLY INSOLUBLE, SALT

G Frank Lydston, MD, Chicago

Considerable interest recently has been shown by physicians in the use of oily "solutions" of red mercuric iodid (mercury biniodid) by intramuscular injections Properly prepared, a solution of the biniodid is an elegant and eligible method for intramuscular administration, but it is well to understand that in the last analysis the biniodid is no more soluble than the salicylate or the mild chlorid I have proved by experiment that the biniodid immediately is precipitated by fresh blood serum It naturally follows, therefore, that the drug is released from solution as soon as injected into the tissues and deposited as an "insoluble" salt I later injected a dose of 1 grain into the abdominal muscles of a rabbit On dissection, about six minutes later, the mercurial salt was found free in the tissues As to its subsequent "solution" and absorption from the site of injection, I am not as yet in a position to state, from experiment So far as therapeutic effects are concerned, the evidence seems to show that such solution and absorption apparently occur The foregoing is worthy of note in connection with the intravenous use of "solutions" containing red mercuric iodid I will state, however, that I frequently have administered intravenously red mercuric iodid dissolved in potassium iodid, thus far with no harmful effects As to the efficacy of intramuscular injections of the biniodid, I am not as yet quite satisfied I am using it, however, quite extensively in the hope that it may prove more efficacious than some of the other insoluble salts

25 East Washington Street

A MODIFIED GRAM STAIN FOR DIPHTHERIA

Albert Albrecht
Hospital Steward United States Navy

In Stitt's "Practical Bacteriology," second edition, is the formula for 'an easily made and quite permanent gentian violet stain"

Saturated alcoholic solution of gentian violet	25 c c
Five per cent dilution of liquor formaldehydi	75 c c

This stain is unreliable as a Gram stain, and was omitted from the third edition of the book

During the past two years at the United States Naval Hospital, Naval Training Station, Great Lakes, Ill, over 3 000 cultures were made from the throats of recruits as they came to the station to determine whether or not they were diphtheria carriers Two and five-tenths per cent were positive

There were also two small epidemics of diphtheria In all, more than 4 000 cultures were made on Loeffler s serum and stained by the following method

1 Stain with the foregoing gentian violet stain for two minutes

2 Flood preparation with one-half strength Gram s iodin solution for one and a half minutes

3 Immerse slide seven or eight times in a jar of 95 per cent alcohol

4 Counterstain with saturated aqueous solution of Bismarck brown for four minutes

5 Wash in water and examine

The Klebs-Loeffler bacillus, when stained according to this method, appears as a brown rod, and the metachromatic granules are stained a deep violet In other words the bipolar granules alone remain gram-positive

A single diphtheria bacillus can quickly be seen in a field with numerous other kinds of organisms

The picture is that which we are supposed to get with Neisser s stain but the organisms are stained more deeply, and the results are more constant

U S S *Illinois,* in care of Postmaster, New York

Therapeutics

MOUTH INFECTIONS

(Continued from page 1371)

PYORRHEA ALVEOLARIS

The occurrence of pyorrhea alveolaris varies among different classes of people At present the care of the teeth has an important place in the daily routine of the better educated people, and although cases do exist among them, they are less frequent than among those who are strangers to the toothbrush and to mouth cleanliness Bass and Johns[9] state that they found pyorrhea in 95 per cent of the cases examined by them It is possible that their cases were collated from the poorer classes of people and from those suffering from tooth affections

By pyorrhea alveolaris is meant a condition in which pus to a greater or less degree is present at the gingival margins affecting the peridental membrane and ultimately exposing the bone As a result, pus pockets, from which pus escapes freely or may be easily expressed, occur Predisposing factors are bad crowns, careless fillings, improper bridging, and, in all classes, neglect of the care of the teeth Bacteria find a lodging place in the tartar deposited on the teeth or under a cap, and set up an inflammation The gums become painful and tender, and there is a tendency to bleed easily from the slightest touch Gradually the gums recede until pockets form between the teeth and gums in which the bacteria grow and thrive unchecked Unless the disease is stopped, the teeth lose their firm support in the alveolar processes and become loose

Pyorrhea alveolaris seems directly responsible for a large number of body ailments, produced by the entry into the lymph or blood stream of the bacteria from the infected gums Their toxins also produce systemic disturbances It is also true that general systemic infections, by lowering the resistance of the gums, may be the starting point of pyorrhea alveolaris, which will continue after the general infection has been cured Removal of the pus may cure the associated condition It is also probable that the pyorrhea, through its micro-organisms and their toxins, reduces the physical resistance of the body to such an extent that it is readily susceptible to other invasions

When, by removal of the pyorrhea, the body resistance is restored to normal, the systemic condition is cured through the action of the antibodies in the blood and the cells Hartzell,[10] in an examination of the teeth in 1,020 cases of mouth infections, in all of which there was pyorrhea, found eighty with disturbances of the alimentary tract, and all with evident signs of malnutrition Other persons were suffering from migraine, and still others were neurasthenic There were cases of arthritis and endocarditis Anemia and even pernicious anemia were found associated with pyorrhea Craig[11] found a number of nervous disorders due to peridental infection The common symptom, paresthesia of the fingers and toes, "pins and needles," he states, may be due to pyorrhea, as may otalgia, tic douloureux, and neuritis of the sciatic nerve and brachial plexus These conditions disappear with the removal of the pyorrhea

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[9] Bass C C and Johns F M Pyorrhea Dentalis and Alveolaris, The Journal A M A, Feb 13 1915 p 553

[10] Hartzell T B The Responsibility of the Dentist and Physician in Regard to Mouth Infections and Their Relation to Constitutional Effects, The Journal A M A, Oct 4 1913 p 1270

[11] Craig C B Peridental Infection as a Causative Factor in Nervous Diseases The Journal A M A Dec 5 1914 p 2027

There has been considerable difference of opinion as to the causative micro-organism producing pyorrhea alveolaris Fully 150 different organisms have been isolated from the gums and described It has been assumed by many using vaccines that the real offender was a streptococcus, and that if such were obtained from the deep recesses of the pus pocket, it could be used for the manufacture of an autogenous vaccine in the treatment of the condition Hartzell and Henrici[12] found streptococci in cases of pyorrhea alveolaris and dental abscess associated with arthritis deformans, acute articular rheumatism, endocarditis, pernicious anemia, gastric ulcer, and acute iritis Vaccines were used with varying results, but these authors cannot positively state that vaccines have a definite value in these cases They also found other organisms present with the streptococci

Barrett[13] and later Bass and Johns[9] recognized the ameba or endameba as the specific micro-organism of pyorrhea alveolaris Barrett,[14] however, also considered that pathogenic bacteria played an important part in the condition There seems to be but little doubt that *Endameba buccalis* is a common invader of the tissues within the mouth, particularly the gums This has been known for many years, the special strain of endameba around the gums having been called the *Endameba gingivitis* by Gros, in 1849 A contrary view of the action of the endameba has been held by Chivero,[15] of the University of Rome, who, after a careful study of the mouth protozoa, stated that he had found the *Endameba buccalis* in the pus in all cases of pyorrhea, but that he thought them beneficial, claiming that they fed on pathogenic bacteria

Perhaps the best proof of the relation of the endameba to pyorrhea alveolaris is furnished by the action of ipecac or emetin, a specific amebicide, on the endameba Such treatment often results in a disappearance of the pyorrhea alveolaris Not only has the pus disappeared, but there has also been a subsidence and improvement, often with cure, of the complications produced by the pyorrhea Emetin treatment, however, without additional measures, such as removing the offending bridge, crown or tooth which may have caused the pus pocket, will not suffice in effecting a cure, as pockets still persist and invite further accumulation of tartar and pus

Treatment of pyorrhea alveolaris may be applied locally, or it may be given hypodermically Bass and Johns[9] give doses of 0 5 gm emetin hydrochlorid hypodermically each day for from three to six days, the duration depending on the case, and also on the stage of the disease They found that the endamebas disappeared from all lesions in 90 per cent of their cases after a one to three day treatment, and in 99 per cent of the cases after at most six days' treatment With the disappearance of the endameba, they also found that the pain and soreness disappeared, and that there was no further tendency of the gums to bleed They found no indication in any of their cases for the space between the root and the alveolar process to fill up with periosteum or other tissue On this account a pocket was left that provided a place for further pyorrhea This would mean constant injection of emetin, which would, for various reasons, be impracticable On this account there is offered good opportunity for recurrences Reinfection may be prevented by daily local application of fluidextract of ipecac to the gums It has been found that this, even when diluted 200,000 times, will kill the endameba The fluidextract may be diluted ten times with alcohol and applied by means of a toothbrush, care being taken to force the ipecac between the teeth Even with this prophylaxis, relapses have occurred, and on this account it is suggested that courses of injections of emetin be repeated every three or four weeks

With the emetin treatment there is also essential the treatment of the teeth, such as removing the tartar, cleaning, and removing any dead tissue from the pus pockets With such treatment the pus pockets should also be irrigated with a weak solution of the fluidextract of ipecac

Williams and associates,[16] studying amebic infections in the mouths of children and the subsequent condition in some of these following treatment by ordinary cleansing methods and in others with mouth washes containing emetin, found in the first group that the number of mouths showing ameba was reduced one-half, and with emetin was reduced to 10 per cent They used a 1 200 emetin solution which, as the treatment continued, was reduced to a 1 400 solution

There have been reported serious results from the emetin injections Levy and Rowntree[17] report two cases of poisoning from emetin, in one of which the patient died In both cases there was diarrhea, and in the fatal case signs of kidney involvement

The question of the constant presence of the endameba in some mouths brings up the question of carriers It is quite evident that inasmuch as the endameba is a common invader of the mouth, the person with pyorrhea alveolaris must be a carrier, and hence capable of infecting those who come in contact with his mouth secretions The disease can doubtless be transmitted in the same ways as other mouth infections, such as by the use of common drinking and eating utensils, by droplets in speaking and coughing, and by kissing

Some of the solutions used in the mouth or injected into the gums have contained hydrochloric acid, and it has been shown that some acid fruits are more cleansing for the teeth and gums than are alkaline washes [18] Tweddell[19] has found that the internal administration of dilute sulphuric acid in doses of from 30 to 60 drops, taken with a large amount of water, and administered three or four times a day, is of value not only in fighting furunculosis, but also in combating pyorrhea alveolaris

Whatever the local or systemic treatment of the *Endameba buccalis* or of the associated pus germs, even when autogenous vaccines are made and used and act successfully, the dental management of the retracted gums and eroded and diseased teeth is of primary importance, and treatment will fail unless the dental care of the jaws is successful

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[12] Hartzell T B and Henrici A T A Study of Streptococci from Pyorrhea Alveolaris and from Apical Abscesses THE JOURNAL A M A March 27 1915 p 1055

[13] Barrett M F Dental Cosmos 1914 lvi 948

[14] Barrett M F Dental Cosmos 1914 lvi 1345

[15] Chivero Angelo Dental Rev December 1914 p 1133

[16] Williams Anna W von Sholly Anna I Rosenberg Caroline and Mann Alice G Significance and Prevention of Amebic Infections in the Mouths of Children THE JOURNAL A M A Dec 11 1915 p 2070

[17] Levy R L and Rowntree L G On the Toxicity of Various Commercial Preparations of Emetin Hydrochlorid Arch Int Med, March 1916 p 420

[18] Oral Cleanliness Therapeutics THE JOURNAL A M A Nov 8 1913 p 1719

[19] Tweddell F Med Rec New York July 4 1914 p 16

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SATURDAY, NOVEMBER 11, 1916

NEWER ASPECTS OF BACTERIAL METABOLISM

In the early era of modern bacteriology, with its discoveries of new micro-organisms and important etiologic consequences following each other in rapid succession, the attention of both investigators and their scientific audiences was focused almost exclusively on the morphologic and cultural characters of the minute living forms which were being recognized for the first time The isolation of some new group of bacteria led at once to the question of its possible pathogenicity and of the precise sort of characters which would enable one to detect and grow the form It was only in later years that consideration was given to the life of the bacteria themselves, to microbiology as a story of the metabolism and growth of these lower organisms apart from their possible relations to disease or other phenomena in the world in which they develop Curiosity early arose, of course, as to the way in which bacteria exerted their functions, how they produced decomposition in organic matter, how they "secreted" poisons of almost magical potency, how they managed to develop under conditions in which other forms of life speedily deteriorated or died, and how they manifested some of the unique properties which have given them popular prominence in a comparatively short time

The classic discovery by Eduard Buchner of zymase, the enzyme of yeast responsible for the reaction of fermentation, served as a stimulus for the investigation of the relation of enzymes to bacterial life Incidentally, the problems of bacterial metabolism forced themselves into the foreground It became more evident than ever before that these lowest forms, the bacteria, likewise effect their changes in the pabulum on which they act through the elaboration of bacterial enzymes Decomposition, whether of proteins or carbohydrates or fats, assumed a new significance not unlike that of the better recognized enzymatic digestive changes in the nutrition of higher forms

It was an unexpected turn when the English bacteriologist Bainbridge[1] announced, in 1911, that certain aerobic and facultative anaerobic bacteria of the gelatin-liquefying and nonliquefying types are of themselves unable to initiate decomposition of purified native proteins These significant facts have been corroborated in this country by Sperry and Rettger[2] at Yale University, who have further shown that certain putrefactive anaerobes like *Bacillus putrificus* and *B oedematis* are likewise devoid of this property The American investigators further showed that the vegetable protein edestin, purified by crystallization, like egg albumin and serum albumin, does not undergo disintegration by direct bacterial action

These unexpected observations[3] naturally have led to the assumption that protein nitrogen cannot be utilized by bacteria unless it is first made available in simpler combinations for cell nutrition through the action of proteolytic enzymes, or some other cleavage agencies The resistance to decomposition is not necessarily due to some factor attributable to the "native" or unaltered condition of the purified isolated proteins heretofore studied in relation to bacterial metabolism, for Rettger, Berman and Sturges[4] have lately found that purified egg albumin, coagulated in the process of sterilization by heat, is still resistant to the bacteria mentioned, when it forms the sole source of nitrogen in the medium Even more surprising, perhaps, is their observation that the inability of bacteria to attack and bring about the decomposition of proteins without the aid of enzymes or other proteolytic agents applies not only to the more complex proteins like egg albumin, but in all probability to proteoses and peptones as well

This statement will promptly meet the reply that commercial "peptones" and proteose preparations are the conventional sources of the nutrient mediums for bacteria in every laboratory throughout the world How is this seeming contradiction to be explained? What are the important sources of nitrogen available for bacterial metabolism without the aid of enzymes? It is now known that the amino acids, recognized as the primary units in nitrogenous metabolism in the higher animals, are readily utilized by bacteria According to Rettger[4] and his collaborators, it begins to appear probable that so-called "peptone" mediums largely owe their value as culture mediums to the amino acids present and perhaps other nitrogenous substances which readily give up their nitrogen as the result of direct bacterial action, and unless bacteria are present which elaborate proteolytic enzymes, little if any of the proteoses and peptone in the medium is utilized It may accordingly become necessary to adopt the view that the bacterial cell cannot utilize any protein until after it has been disintegrated by some other agent and the nitrogenous portion converted into a simpler form

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[1] Bainbridge F A The Action of Certain Bacteria on Proteins Jour Hyg 1911 xi, 341

[2] Sperry J A, and Rettger L F The Behavior of Certain Bacteria Toward Purified Animal and Vegetable Proteins Jour Biol Chem 1915 xx, 445

[3] The Resistance of Pure Proteins to Bacterial Decomposition editorial The Journal A M A July 17 1916 p 257

[4] Rettger, L F Berman N and Sturges W T Further Studies on Bacterial Nutrition The Utilization of Proteid and Non Proteid Nitrogen Jour Bacteriol, 1916 i 15

If this view becomes tenable, it will be necessary, as Rettger maintains to alter materially the current conception of the value of "peptone" and other soluble as well as insoluble proteins as culture mediums, especially so far as certain groups of tested bacteria are concerned These newer conceptions evidently bring the metabolism and constructive nutrition of the bacteria into a degree of harmony with that of the higher animals In the latter, complex foodstuffs must be prepared for the cells through the disintegrative help of enzymes either within or without the organism No cell can directly assimilate and utilize undigested foreign food material The same plan may perhaps apply to the bacterial cell, Rettger ventures, as well as in the field of animal cell nutrition

IMMATURE VEAL AND HARD PALATES

Tradition and custom play a significant part in the selection of the dietary Frequently these factors are the logical outcome of local economic conditions or geographic necessity One would scarcely expect potatoes, for example, to be a prominent component of the ration in a region in which they are not readily available, owing to agricultural difficulties Likewise the sort of cereal which is most generally consumed in one region or another has usually depended on the specific produce of the locality concerned Latterly the ease of communication and transportation has made a much larger range of edible products available in all areas to which civilization reaches Even perishable materials, like fresh fruits and meats, are carried literally to the uttermost ends of the earth for distribution More stable products are correspondingly easier of transmission to open markets, according to the economic laws of supply and demand

Sometimes an established prejudice in matters of diet puts an almost impenetrable barrier against the introduction of innovations in respect to diet We have referred in the past to an instance of this which seems to exist regarding the use of very young veal, sometimes designated as bob veal [1] The sale of calves less than from 3 to 6 weeks old for food is prohibited by federal and state laws Is the current attitude against the young veal logical? Let us consider the argument of government experts in the field of nutrition That the common opinion that veal is less wholesome than beef, they tell us,[2] and young veal less so than mature veal is not a consistent prejudice against young flesh foods is shown by the common and apparently growing taste which prefers squab to pigeon, ranks broilers as superior to fowls, considers sucking pig a great delicacy, and regards hothouse lamb—that is, lamb less than 3 months old and rapidly grown and fattened—as being as much superior to older lamb as lamb is to mutton

What are the alleged justifications for the traditional prejudice against young veal? By some it has been claimed to be rather indigestible and thus made responsible for gastro-intestinal disturbances Others have ascribed to it a positive toxicity of some sort, postulating the existence of some harmful compound which disappears with the age of the animal Fish[3] of Cornell University hurled defiance at inherited belief a few years ago in his championship of young veal as a harmless food No toxicity whatever could be established in his experiments on many human subjects More recently Berg[4] of the Bureau of Animal Industry has helped to dispel mistaken beliefs by showing that there are no physiologically significant differences in the chemical composition of beef and immature veal In a large number of artificial digestion experiments he found that the young veal was as quickly digested as beef, and feeding experiments with animals supported the contention of the harmlessness as well as the nutrient qualities of meat from very young calves

Even more convincing must be the elaborate investigation of the coefficient of digestibility of very young veal conducted by Langworthy and Holmes[2] at the office of Home Economics in the State Relation Service, Washington The value of their studies will be greatly enhanced in the eyes of many by the fact that the experiments were conducted on the human subject in normal health The outcome was definite in showing that the digestibility of the protein of bob veal is the same as that found for market veal—namely, 93 per cent, in round numbers The subjects of the dietary and digestion experiments experienced no physiologic disturbances during the experimental period or afterward The tests showed that such veal can be prepared for the table in palatable ways, and that so far as could be judged, it was not unwholesome when eaten in quantity In the digestion experiments the average weight of protein supplied by the meat exceeded that generally furnished by the meat portion of the ordinary diet, indicating that very young or bob veal was not distasteful In the light of known facts one may reasonably conclude, therefore, that the general opinion that young veal is a common cause of digestive disturbance or fails to digest as thoroughly as similar foods is not justified

Perhaps a better understanding of the truth about young veal will ultimately serve a manifold benefit In grazing areas in which the cheapness of food makes it possible to rear cattle at least to early maturity, there is a natural tendency to do so In regions in which the dairy industry is highly developed, milk is such an important product that it is not thought profitable to rear calves beyond the period when the mother's milk becomes salable Under present traditions the lack of a market for very young veal results in the slaughter of the calves soon after birth without any attempt to feed them until the lawful marketable age Changing economic conditions, especially the growing scarcity of meat, may help to overcome the existing prejudices and save what is now a considerable loss in the food industry

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[1] Is Bob Veal Toxic? editorial The Journal A M A March 15 1913 p 834 Bob Veal June 7 1913 p 1795

[2] Langworthy C F and Holmes A D Digestibility of Very Young Veal Jour Agric Res 1916 vi 577

[3] Fish P A. Preliminary Observations on Bob Veal Rep New York State Vet Col 1909 1910 p 130 Further Observations on Bob Veal ibid 1910 1911 p 138 The Digestibility and Decomposability of Bob Veal ibid 1912 1913 p 51

[4] Berg W N Biochemical Comparisons Between Mature Beef and Immature Veal Jour Agric Research 1916 v 667 Immature Veal as Food editorial The Journal A M A March 11 1916 p 820

Reference to economic necessity may serve to call attention to another neglected animal product, the so-called "hard palates" which are taken from the roof of the mouth of beef cattle These contain very little muscular tissue such as is characteristic of meats in general, and they are of somewhat unattractive appearance Aside from a small layer of stratified epithelium, the bulk of the tissue consists of connective tissue together with a small admixture of involuntary muscle The government experts[5] have found that these hard palates can be transformed into a palatable product by suitable culinary procedures According to the report just cited, the protein of the hard palates appears to be almost as thoroughly assimilated, if it has previously been thoroughly cooked, as that of the common cuts of meat Perhaps this newly suggested food product will make a greater appeal if conditions arise in which frugality and conservation of meat resources become more necessary than at present

INTRAVENOUS THERAPY

The intravenous administration of drugs is a new departure in therapy, but one which is rapidly increasing in use Among its reputed advantages are that it is the quickest means of obtaining the effects of a drug the effects are obtained with a certainty not obtained by other methods, and they are so marked that they cannot fail to impress the observer These advantages in many cases are apparent rather than real, but even were they real advantages, they should not blind us to the various and serious dangers which this method involves The technic, although not difficult, must be thoroughly mastered, or undue pain, infection, air embolism, or even death may result Such accidents, however, are ordinarily easily avoided, and should be considered quite inexcusable More serious is the fact that the drugs given intravenously reach the system, and especially the heart, in a different manner and concentration from that to which physicians are accustomed with ordinary methods of administration Pharmacologists have long practiced intravenous administration, when studying acute effects of drugs, and they have observed that frequently the immediate result of such injections is a prompt fall of blood pressure, not obtained when the same drugs are given by mouth or even hypodermically This fall in blood pressure is commonly attributed to irritation of the endocardium It is usually of short duration, but is certainly undesirable and sometimes may have serious results

It has also been observed that several drugs, for instance, quinin and potassium, depress the cardiac muscle when given intravenously much more than when given in other ways Furthermore, any substance which tends to precipitate proteins must be injected slowly and with extreme caution, or it will produce intravascular clotting and sudden death Deaths have resulted not only from a lack of knowledge of the technic of intravenous therapy, but also from a lack of knowledge of drugs which may be so administered Sudden death has been reported following the injection of an iron preparation containing peptone, and also following intravenous injection of ether Intravenous injections, while sometimes superior to the slower methods, are distinctly inferior when a continuous rather than a sudden action is desired Drugs leave the blood system with great rapidity, and therefore their action on the circulation will cease promptly unless they are continuously supplied It would be undesirable to inject intravenously such drugs as iodids, nitrites, iron or salicylates

With these dangers and disadvantages in mind, it seems unwise to resort to promiscuous intravenous medication until the effects of this method have been studied in detail for the drugs employed, and unless there are distinct advantages to be secured This is the case when an immediate action is necessary in emergencies, as in the use of strophanthin for cardiac collapse, quinin in pernicious malaria, etc, or if the drug would be destroyed in the stomach or tissues, as in the case of salvarsan, or where the drug is not adequately absorbed by any other channel, as in the case of epinephrin

Intravenous therapy will be most securely advanced if its employment is restricted to such well defined fields These fields can be satisfactorily determined only by a scientific pharmacologic study of the action of these drugs when so administered in animals, as well as in man, under conditions in which the results are carefully controlled The intravenous method is an impressive one, approaching in preparation almost to that which goes with a surgical operation The patient is usually interested and impressed by this new, and to him, mysterious method There is a psychic element in his reaction to the injection which is not a factor in his reaction to the same drug when given by mouth The intravenous injection of a complex mixture would appear to be particularly reprehensible Little is known, as has been stated, of the results to be expected from intravenous therapy, even with simple substances The use of complex mixtures will without doubt react against the proper use of the method

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[5] Langworthy C F and Holmes A D Digestibility of Hard Palates of Cattle Jour Agric Research 1916, vi 641

POSSIBLE DANGERS OF THE BUBBLE FOUNTAIN

The propaganda in the interest of public health has succeeded in introducing numerous innovations into our daily life Most of these have improved sanitary conditions some have helped to eradicate disease and to promote hygienic efficiency The dangers to health which lurk in the common use of articles that find an application in the everyday life of man with respect to his person have become more clearly recognized with the development of bacteriology Dentists' and barbers' utensils, the common towel, and the public drinking cup are believed to harbor a menace because of the possibility of transmitting infection from person to person through the successive use of the same device without special purification or sterilization for each application

Laws have been framed to prohibit the use of the common drinking cup and are being widely enforced in this country As a result, the "individual" or single service cup, usually made of paper, has come into use, and where suitable water supply is available, the bubble fountain has been generally installed In the latter device it has seemed as if the application of sanitary science had almost reached hygienic perfection, for what could be more obvious than the freedom of the ever changing bubbling stream of pure water from contamination through the evanescent contact with the mouth?

The circumstance of an epidemic of streptococcus tonsillitis two years ago in one of the dormitories of the University of Wisconsin unexpectedly directed suspicion to the bubble fountains in the building The water pressure in them was so low that it was scarcely possible to drink from the bubbler without touching the metal portions with the lips An examination of the fountains showed them to be heavily contaminated with streptococci Positive results were obtained from the surface of the fountain, from the inside and from the water discharged, but the city water supply by which they were operated gave no evidence of these organisms These facts led to an extensive bacteriologic investigation of the hygiene of the bubble fountain in general by Pettibone, Bogart and Clark[1] of the University of Wisconsin Laboratory of Medical Bacteriology From this it appears that the bubble fountains may become a factor in transmitting disease

The facts of the Wisconsin investigation are surprising as well as unexpected A survey of all fountains of the university showed the presence of streptococci in over 50 per cent of the total number These bacteria varied in abundance from a few chains to an almost pure culture obtained by swabbings from fountains in the epidemic-ridden dormitory In an experimental bubble fountain, *Bacillus prodigiosus* when introduced either by means of a pipet or by the moistened lips remained in the water from two to 135 minutes, depending partly on the height of the "bubble"

The explanation of this finding seems to be clear Most of the organisms are flushed away in the water stream, but some remain dancing in the column much as a ball dances on the garden fountain, even though the bubble be increased to the impracticable height of 4 inches To avoid this difficulty, always present in the vertical column of spouting water, a simple fountain with a tube at an angle of 50 degrees from the vertical was constructed *B prodigiosus* was never found in the culture plates from this type of fountain, even when samples were taken immediately after the intentional introduction of the organisms

Danger disguised in the cloak of safety is a menace of the most potent sort, particularly when it receives the approbation of health authorities in the way that the bubble fountain has shared it The Wisconsin investigators believe that a jet of water from a tube erected at an angle of 15 degrees or more from the vertical and with an adequate collar guard to prevent possible contact with the orifice is adequate to prevent micro-organisms from "dancing" on the column of water The construction of a safe bubble fountain is thus made practicable, and the problem of furnishing water uncontaminated by human lips even to a constant succession of thirsty persons is apparently solved anew

Current Comment

NATIONAL RESEARCH COUNCIL

The National Research Council, organized by the National Academy of Sciences at the request of the president of the United States, has elected Dr George E Hale, the director of the Mount Wilson Solar Observatory, as chairman This council has been created to bring into cooperation existing governmental, educational, industrial and other research organizations in order to encourage the investigation of national problems, the increased use of scientific research in the development of American industries, the employment of scientific methods in strengthening the national defense, and such other applications of science as will promote national security and welfare Under such a plan, the possibilities of the council are practically unlimited It has been decided that the efforts of the council shall be uniformly directed toward the encouragement of individual initiative in research work, and that cooperation and organization shall not involve restrictions or limitations of any kind on research workers Committees on research for educational institutions, promotion of industrial research and national census of research have been appointed Joint committees on various branches of science are to be formed to cooperate with corresponding national scientific societies Dr William H Welch, Dr W W Keen, Surgeon-General W C Gorgas, Dr Victor C Vaughan and Dr Simon Flexner comprise the medical members of this important board

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[1] Pettibone Dorothy F Bogart F B and Clark P F The Bacteriology of the Bubble Fountain Jour Bacteriol 1916 i 471

THE "UNITED DOCTORS"—TYPICAL QUACKS

"The professionalism of the case taker and fee getter is of worth only insofar as it tends to make the desired impression upon the patient" The statement just quoted is credited, by Dr Burton E Manchester, to another physician previously hired by him to play the part of an itinerant "specialist" Here is expressed, in few words, the letter and the spirit of the principles that govern the advertising quack Manchester, as will be seen by those who read the Propaganda Department this week, was the head of an itinerant quack organization styled the "United Doctors" He hired professional renegades to go from town to town as "specialists" Their coming was heralded in the newspapers by advertisements placed by Manchester through an advertising agency managed by Manchester, they dispensed pills and potions furnished by Manchester, they obtained and kept records of the financial condition of the victims and sent these reports to Manchester After paying for the advertising, the medicaments, stationery, "follow-up letters," hotel and traveling expenses, 50 per cent—or more—of what was left went to Manchester Such was the scheme of the itinerant United Doctors Because two of Manchester's hired men decided to place their own advertising (using the United Doctors' "copy"), furnish their own medicines and pay their own traveling and hotel expenses, keeping the entire amount garnered from the gullible, Manchester sought relief in the equity courts and urged that his two traitorous disciples be enjoined from continuing their nefarious trade The result of this court action was to give the public a little light on the inner workings of the quack And it is from one of the exhibits in this case, submitted by Manchester, that the quotation with which this comment opens is taken "With me," still quoting from Manchester's exhibit, "as you probably know, the *modus operandi* is essentially commercial" It is The man speaks not only for himself, but for the quack fraternity generally

RECENT LEGISLATION FOR THE MEDICAL CORPS OF THE NAVY

A few weeks ago attention was called to legislation which had been enacted for the medical department of the army The last Congress also enacted legislation for the Medical Corps of the navy which should make most attractive a career in that branch of the public medical service Like the Medical Corps of the army, this corps is placed on a percentage basis equal to 6 5 per cent of the total personnel of the navy, immediately increasing the corps from 345 to over 680 medical officers, there are at present over 350 vacancies The corps now has all ranks, from that of assistant surgeon with the rank of lieutenant junior grade (corresponding to rank and pay of a first lieutenant in the army) to the grade of medical director with the rank of rear admiral (corresponding in rank and pay to that of a major-general in the army) The establishment of the rank of rear admiral for medical officers, other than the officer temporarily holding the rank of surgeon-general, is a special achievement for the Medical Corps of the navy, as it establishes a dignity of high rank for a staff corps The upper grades of the corps, that is to say, above the rank of lieutenant-commander (corresponding to the rank of major in the army), are distributed on a percentage basis—0 5 per cent rear admirals, 4 per cent captains (corresponding to the rank of colonel), and 8 per cent commanders (corresponding to the rank of lieutenant-colonel) An officer in the lower grades of the Medical Corps is promoted through the various grades, with the officer of the line with whom or next after whom he takes precedence Promotion is certain to be rapid for those entering the Medical Corps of the navy within the next three years[1] Twenty large general hospitals with most complete and modern equipment are maintained in various parts of the world The corps also maintains a quarterly journal which reflects the scientific character of the work accomplished Candidates for this corps are examined in two stages The first stage of the examination is in the fundamental medical branches The candidate, if successful, is then appointed to the Medical Reserve Corps After a course of study at the Naval Medical School at Washington, D C, he comes up for final examination for commission The candidate may appear at a date mutually convenient to him and the board, as the latter is constantly in session at the naval hospitals at Boston, New York, Philadelphia, Washington, Norfolk, Charleston, Chicago, San Francisco and Puget Sound To the young medical man who feels that he owes a duty to his country, and who would fulfil that duty, at the same time securing practical development, broadening travel and experience in scientific research, the Medical Corps of the navy offers an exceptional opportunity

WHAT MALARIA COSTS THE SOUTH

Most people measure the importance of a thing largely by its cost Human life and suffering have no definite cash value Until recently sanitarians and health advocates endeavored to arouse the public by showing the number of lives which could be saved and the quantity of suffering which could be avoided by stamping out preventable disease Their efforts appealed only to the minority Profiting by this early experience, the present day sanitarian endeavors to get away from the sentimental and purely humanitarian aspect of disease and to reduce it to terms of dollars and cents, appreciating that the commercial aspect will appeal to many persons not directly interested in health problems An interesting effort in this direction is that by Van Dine,[1] of the United States Bureau of Entomology, who has made a careful study of conditions on a plantation in Madison Parish, La Herrick in 1903 had suggested the enormous losses from this cause in the South, and Howard in 1909 estimated the annual loss in the United States from malaria to be not less than $100,000,000 These were necessarily estimates Dr Van Dine endeavors to work out the problem accurately on a small scale The principal effects of malaria on farming are a reduction in the net profits on crops and reduced values from nondevelopment of farm lands The survey included a detailed study of seventy-four tenant families, consisting of 299 individuals, on one plantation of 1,800 acres There were 166 cases of malaria in 138 individuals out of a total of 299 persons The actual time lost through malaria was 1,066 days of adult time from May to October, an average of 14 4 days for each family, or 6 42 adult days for each case of malaria The loss in efficiency was 25 per cent In May, June, September and October, there was a total loss directly affecting the crops of 660 adult days, equal to a money loss of $6,520 50, $2,200 of which was lost through sickness and $4,300 through inefficiency from malaria The wage loss to the laborers was $660, and the net loss to the owner was $5,860 50

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[1] The surgeon general of the navy has issued a most interesting illustrated circular which may be obtained from his office on application describing the advantages of a career in the navy This pamphlet will be of interest not only to prospective candidates but also to the medical fraternity in general as it contains much illuminating information concerning a special field for the medical profession and the character of its work which takes its members to every part of the globe

ANTIGENS AND ANTIBODIES IN SCARLET FEVER

Many different organisms have been isolated from the blood and tissues in the acute stages of scarlet fever, but whether any one of them is responsible for the disease is yet to be determined Thus far suspicion mostly lies on the streptococci Most of the work designed to demonstrate antibodies specific against the streptococci in scarlatinal serums has been based on (1) agglutination, some claiming specific agglutination and others denying it, (2) the opsonic index, which indicates that the streptococci play a part in the disease, and (3) complement deviation, which has not given any results which are decisive Recently Drs G F and G R Dick,[2] finding that animal experiments had failed to give definite results, sought by complement deviation and cutaneous tests to ascertain whether or not the blood at the height of intoxication, extracts of the spleen and of the lymph glands, or the mouth and throat secretions harbor a possible ultramicroscopic virus, or one which declines to grow on mediums in use The complement fixation tests with the blood and with the organ extracts, and the cutaneous tests with these extracts were wholly negative, according on the whole with the work of previous investigators with organ extracts With mucus from the throat in scarlatinal anginas as antigen, however, they obtained positive complement fixation in twelve of twenty-two convalescent scarlatinal serums (54 per cent) The predominant bacterial growth in these mucus antigens was that of the streptococci, and tests comparing the antigenic power of the predominant streptococcus with that of the mixed culture of the mucus, and with that of each of twenty-two other organisms isolated in scarlatinal anginas indicated that no antigenic property need be assumed other than that of the predominating streptococcus Of interest in this connection is the report of Di Cristina,[3] who asserts that he has induced specific complement fixation with antigen prepared from the desquamated scales of scarlet fever Indeed, he has made a vaccine of the scales, which he says brings about specific complement fixation in the blood after three injections, and which he asserts has protected normal children through a thorough exposure to scarlet fever That which he declares confers immunity on the healthy organism, if it shall be substantiated in subsequent work by other investigators, would seem to be a clue to the etiology of the disease

WHEN WOMEN VOTE

Speaking of the ten hour limit for women workers — a good thing — what about the new conditions that have arisen? Now woman votes and is assuming the responsibilities of mere man For example, she acts as an election official, reports for duty at 6 a m and finishes her work somewhere between fourteen to twenty-four hours later When one considers the environment of the ordinary polling place one wonders whether it would not be advisable to make the regulations for conducting elections accord with the law

GERMAN AND AUSTRIAN MEDICAL JOURNALS

On two or three occasions THE JOURNAL has called attention to the fact that German and Austrian medical journals were not being received This has been the condition of affairs for some months Attention[4] was called to the fact that the military authorities had issued orders that medical books and periodicals which might in any way help the enemy in conducting the war should not be sent out of the country An Austrian exchange last December related that the officers of the organization of German publishers petitioned the authorities to countermand this order, emphasizing the neutrality of medical science and expatiating on the fact that German medical literature stood at the head of medical literature the world over, and that there was danger it might lose this position if exportation was forbidden, especially to neutral lands As will be noted in our news columns, German and Austrian journals are now making their appearance, nearly all foreign exchanges coming to hand this week Each one bears a stamp to the effect that it has been released for exportation It is noted in some of the journals that only certain numbers are so released Those not released presumably contain matter which the authorities think should not be given general publicity

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[1] Van Dine D L The Relation of Malaria to Crop Production Scient Month November 1916 p 431

[2] Dick G F and G R Immune Reactions in Scarlet Fever Jour Infect Dis 1916 xix 175 638

[3] Di Cristina G Immunity Reaction and Vaccination Against Scarlet Fever Pediatria Naples 1916 xxiv 385 abstr THE JOURNAL A M A Sept 30 1916 p 1049

[4] THE JOURNAL Feb 5 1916, p 440

However that may be, it is encouraging once more to learn from original sources what is going on in medicine and surgery in Germany and Austria We hope that this release of medical journals means that we shall again hear from our Berlin, Vienna and Budapest correspondents

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES NEW HOSPITALS EDUCATION PUBLIC HEALTH ETC)

DISTRICT OF COLUMBIA

Personal—Dr Joseph J Kinyoun, bacteriologist of the health department, who at the request of the authorities of Winston-Salem N C, has been for several months engaged in the reorganization of the health department of that city, has resumed his duties in Washington

Appointments in Health Department—Dr Joseph A Murphy, formerly in the medical service of the United States Office of Indian Affairs, has been appointed chief medical and sanitary inspector of public schools——Reid R Ashworth D V M, who has been for some years in the food inspection service, has been promoted to the position of chief food inspector

ILLINOIS

Raise Requirements—The state board of health will it is announced, pass a resolution at its next meeting requiring an internship in a hospital for one year in addition to the five years now required for medical certification, effective for all students matriculating after Jan 1, 1917

Personal—Dr Charles N Pence, East Alton, was knocked down by a horse October 27 and three ribs were fractured ——Dr Carl Bernhardi Rock Island, gave a dinner, October 25, in honor of Dr Henry Matthey, Davenport, who has recently returned after service of more than a year at Brownsburg Germany where he was in charge of a base hospital ——Dr John T Legier, Carmi, has been seriously ill with septicemia due to an infected wound of the thumb——Dr J Howard Beard has been appointed health officer of the University of Illinois, Champaign-Urbana

Chicago

Typhoid at Englewood—The sixteenth case of typhoid fever among students and teachers of the Englewood High School developed October 24 Up to the present the health authorities have not succeeded in locating the source of this epidemic

Gynecologic Society Prizes—The Chicago Gynecological Society announces that it will award a prize of $100 to the author of the best paper presented to the society during each year on any gynecologic or obstetric subject Those who desire to enter this competition should apply to Dr N Sproat Heaney, secretary of the society, 104 South Michigan Avenue

Asks for Orthopedic Home—At the meeting of the Cook County board with representatives of thirty-five social service organizations, President Reinberg emphasized the need of a state institution for crippled children, where they may receive orthopedic treatment and the advantage of proper care and education It was stated that the capacity of the three institutions at present in the state is limited to 200 children and that there are 3,000 children in need of orthopedic care

Honor to Fenger—At the Cook County Hospital, November 3 more than 200 Danes and Danish-Americans assembled at the unveiling of the memorial tablet to Dr Christian Fenger The tablet was presented by the Danes of Chicago to perpetuate the name of Fenger Governor Dunne accepted the memorial for the state, and addresses were also delivered by Dr Joseph L Miller and others The memorial is the work of two Danish artists of Chicago, was unveiled by Miss Julia Jenson and Master Andrew Lundsburg, and was decorated with wreaths by Miss Clara Sorenson

To Care for Poor Children—Health Commissioner Robertson announced, October 3 after a conference with Dr A Augustus O Neill, president of the Chicago Medical Society, the appointment of an advisory committee to the health department on diseases of the eye, ear, nose and throat This committee consists of Dr P J H Farrell chairman, Dr Martin M Ritter, secretary, and Drs Merlin Z Albro, Ulysses J Grim, William L Noble and Robert Sonnenschein, and its function is to suggest and devise means by which schoolchildren suffering from diseases of the organs of special sense may receive attention free of charge if their parents are unable to pay for treatment

KENTUCKY

Rulings on Quarantine—By the ruling of the state board of health October 4 diphtheria patients must not be released from quarantine until two negative reports have been received from the state laboratory or the city laboratory, and scarlet fever quarantine must not be raised under three days

Personal—Dr Squire L Helm, Lexington, first assistant physician at the Eastern State Hospital, has been appointed superintendent of the State Institute for the Feeble Minded, Frankfort, succeeding Dr H C Kehoe, Frankfort——Dr Will F Arnold, Bowling Green, is reported to be seriously ill as the result of a cerebral hemorrhage——Dr Prather B Curlin Hickman, fractured his right arm, September 28, while cranking his car

New State Officers—The sixty-fifth annual meeting of the Kentucky State Medical Association convened in Hopkinsville October 25, under the presidency of Dr James W Kincaid Catlettsburg The selection of Dr Milton Board Louisville, as president-elect, vice Dr Ap Morgan Vance, deceased, was ratified by the House of Delegates and the following officers were elected president-elect, Dr Philip H Stewart, Paducah, vice presidents, Drs Ben P Earle, Charleston, Albert S Brady Greenup, and Joseph G Gaither Hopkinsville, councilors Drs James W Kincaid, Catlettsburg, Joseph N McCormack Bowling Green, and Robert C McChord Lebanon, delegates to the American Medical Association, Drs Arthur T McCormack, Bowling Green and Madison E Alderson Russellville, orator in medicine, Dr Sidney J Meyers, Louisville, and orator in surgery, Dr Fred L Koontz, Louisville Dr Elmer L Henderson, Louisville, was elected councilor from the fifth district succeeding Dr Charles W Hibbitt on duty with the state troops on the Southern border, Dr Daniel M Griffith Owensboro, was elected councilor from the second district succeeding Dr Cyrus Graham, Henderson, resigned Ashland was selected as the place for the next meeting

MARYLAND

Infantile Paralysis Quarantine Removed—Health Commissioner John D Blake, Baltimore, issued an order that removed the infantile paralysis quarantine, November 1 The order affected about 30,000 children less than 13 years of age who have been kept out of the schools on account of the disease Conditions are not yet quite normal and caution against risking infection is urged by the health department The condition in the counties is much improved and no new cases have been reported

Meetings—The twelfth Maryland Conference of Charities and Correction will be held at the Emerson Hotel in Baltimore in conjunction with the Delaware and District of Columbia conferences, November 14, 15 and 16 Prominent speakers from all over the country will take part in the program——At a meeting of the Baltimore City Medical Society, November 3 infantile paralysis was discussed by the health officers and P A Surg James P Leake of the United States Public Health Service, who spoke on the epidemic in New York A report on necropsy findings with an exhibition of specimens was made by Dr John F Hempel of the health department Dr John D Blake, health commissioner, also spoke, telling how the health department handled the situation in Baltimore and stating that there were only 185 cases from the latter part of June to November 1, and of this number forty-seven were negroes

MICHIGAN

Society Postgraduate Work—The Jackson County Medical Society has completed a week of graduate study under the direction of an experienced medical teacher During the day, clinics were held at a local hospital, and at these members of the society, under the direction of the instructor, examined patients In the evenings lectures on different subjects were given The interest manifested and the benefit obtained prompted the society to take action in accordance with which one or two similar week-long programs will be arranged each year

Internship Required—At its meeting, held October 11, the Michigan State Board of Registration in Medicine adopted a resolution requiring all candidates for examination who matriculated in recognized medical colleges subsequent to Jan 1, 1917, to have an additional qualification of one year's internship in a recognized hospital before being admitted to the examination for licensure This is the fifth state to require a year's internship The requirement became effective for all graduates in Pennsylvania in 1914 in New Jersey in 1916, and will become effective in Rhode Island in 1917, and North Dakota in 1918 In Michigan it will apply to graduates in 1921 and thereafter

Personal—A banquet was given, October 27, by the citizens of Clare, in honor of Dr Thomas H Maynard, who has just completed half a century in practice of medicine——Dr William H Price, health officer of Detroit, was elected president of the International Milk Inspectors' Association at its fifth annual meeting, held recently in Springfield, Mass——Dr Arthur W Tucker, Grand Rapids, who was recently operated on for removal of the spleen, is reported to be convalescent——Dr Arthur F Fischer, Hancock, has been reelected president of the Michigan Antituberculosis Society——Dr and Mrs Charles C Dellenbaugh, Portland, celebrated their golden wedding anniversary, October 4——Fire of unknown origin destroyed the new house of Dr Julius C Clippert, Detroit October 7——Dr George A Conrad Houghton, has resigned as township physician and village health officer to become chief surgeon of the Mohawk and Wolverine Mining Company, with headquarters at Mohawk

MINNESOTA

Southern Minnesota Physicians to Meet—The annual meeting of the Southern Minnesota Medical Association will be held at Mankato, December 4 and 5 under the presidency of Dr E Starr Judd, Rochester The annual banquet will be held on the evening of the first day Among the essayists from outside the state are Drs George W Crile, Cleveland, and Albert J Ochsner, Chicago

Personal—Dr Egerton L Crispin, who has been associated with the Mayo Clinic staff Rochester for three years has moved to Los Angeles——The office and library of Dr Hugh C Arey Excelsior, were burned, October 27, with a loss of about $5,000——Dr Everton J Abbott, St Paul, who has been seriously ill is reported to be improving——Dr William N Theissen, Faribault, who was operated on for appendicitis and the removal of gallstones at St Lucas Hospital, October 18, is reported doing well——Dr Arthur C Rogers, Faribault, is said to be seriously ill with anemia at the Hospital of Minnesota Minneapolis——Dr Myron Sherper, St Paul, who has been under treatment at a local hospital on account of an injury of the arm, has recovered and resumed practice

NEW YORK

Personal—Dr Arthur W Booth, Elmira, has been elected president, Dr Lewis S Pilcher, Brooklyn, vice president, and Dr Willard J Denno New York secretary, of the State Board of Medical Examiners

Annual Elections—At the forty-eighth annual meeting of the Medical Association of Central New York, held in Buffalo, October 19, the following officers were elected president Dr Ledra Heazlit, Auburn, vice presidents, Drs John J Buettner, Syracuse, and Charles W Hennington, Rochester, secretary, Dr Thomas F Laurie, Auburn Auburn was selected as the next place of meeting——At the meeting of the health officers of the state who took the recent course in the Syracuse College of Medicine Dr Charles H Bennett Sodus, was elected president, Dr Ernest H Wiedrich Ontario, secretary, and Dr Robert Knight Seneca Falls treasurer

New York City

National Committee for the Prevention of Blindness—This organization will hold its second annual meeting in the New York Academy of Medicine, November 24 at 4 30 p m The president, William Fellows Morgan, will preside and Surg John McMullen, U S P H S, will deliver the chief address

New Red Cross Bureau in New York—The American Red Cross has established a special information bureau in the Metropolitan Tower, New York, under the charge of Mr Albert Staub It is the purpose of this bureau to keep the more than 200 Red Cross chapters in this country constantly advised as to the needs of the foreign Red Cross societies and representatives

Personal—Dr James J Walsh, New York, was presented with the Laetare Medal by the University of Notre Dame, Indiana October 21——Dr Fred H Albee, Manhattan, has returned after service in France——Dr William Sharpe, New York, delivered an address on recent advances in brain surgery, illustrated by moving pictures, before the College of Physicians, Pittsburgh, October 27

Plans for Army Hospital—The Presbyterian Base Hospital Unit of the American Red Cross, organized when similar units were organized in the New York and Bellevue hospitals, has prepared lantern slides of plans and drawings of a model base hospital which were recently exhibited in the lecture room of the hospital They represent the working out of the problem as suggested by the surgeon-general of the army for the construction and preparation of a base hospital of 500 beds for use in the United States Army in time of war

After-Care of Paralysis Victims—Plans for the after-care of the victims of infantile paralysis have taken definite shape The plans contemplate a central body to look after all the children discharged from hospitals, the training of nurses, especially for the work, and the districting of the city in order to conduct the work systematically Dr L Emmett Holt is reported as having told the committee on after-care that there will be between 4 000 and 5,000 children in New York left helpless from the epidemic The transportation committee has two ambulances and two motor cars running daily, and the use of two more cars has been promised These cars take the children to and from the dispensary or hospital The establishment of a day nursery for crippled children, where they may be cared for by trained nurses and taught at the same time, has been suggested The Post-Graduate Hospital has opened a department for the after-care of children crippled from poliomyelitis where the latest appliances for treatment have been installed

NORTH CAROLINA

Sanatorium Notes—The sanatorium of Dr Buxton B Williams, Greensboro, has been consolidated with the Bloomsbury Sanatorium at Raleigh, and the institute will be known hereafter as the Williams-Oliver Sanatorium It will be under the charge of Drs Buxton B Williams and Adlai S Oliver——Tranquil Park Sanitarium was formally opened October 14 Dr John Q Myers, Charlotte, is president and medical director of the institute

Personal—Dr Joseph Akerman, Wilmington, has been appointed director of the University Hospital, Augusta, Ga, succeeding Dr William C Lyle, resigned——Dr Edward M Gayle has resigned from the medical staff of the State Hospital, Morganton——Senior Surg James B Stoner, U S P H S, who has been for two years in charge of the United States State Hospital at Wilmington, has been transferred to Ellis Island New York, where after two or three months in charge of the immigration station, he will take charge of the immigration work at Montreal

Hospital Notes—The Wilmington Marine Hospital has been reopened and placed under the charge of Dr John C Wessell The hospital will be used also as a research station in the pellagra work of the state——The Gastonia State Hospital has leased and will occupy the fifth floor of the Realty Building in addition to the two floors already in use——The new hospital at Berrien Springs, recently erected by the Sprunt family of Wilmington, at a cost of $15,000, was opened September 19——The Martin Memorial Hospital, Mount Airy, has been incorporated with a capital stock of $25,000

PENNSYLVANIA

Cost of Baby Malady—State Health Commissioner Dixon November 1 received a report showing that the state s fight against infantile paralysis from the start of the outbreak July 1 to October 1 cost the commonwealth $61,004 This sum does not include any of the money paid to the regular health officers of the department

For New Hospital—A campaign to raise $150 000 for the new Sacred Heart Hospital Allentown, ended October 31 with contributions aggregating $183,000, not including an offer from an anonymous donor to buy surgical instruments to the value of $5 000 The campaign was nonsectarian and was conducted under the direction of Monsignor Peter

Masson, with Harvey E Bohner as chairman of the executive committee

Industrial and Efficiency Conference—The fourth annual Industrial Welfare and Efficiency Conference will be held under the direction of the Pennsylvania department of labor and industry in the hall of the house of representatives, Harrisburg, November 21-23 The Engineers' Society of Pennsylvania is cooperating On Tuesday morning, after the usual addresses of welcome, Hon Harry A Mackey, chairman of the state workmen's compensation board will speak on "Nine Months of the Workmen's Compensation Law in Pennsylvania" This will be discussed by representatives of the employers and employees, also by Dr William L Estes, chairman of the committee on workmen's compensation of the Pennsylvania State Medical Society In the afternoon, "The Accident Problem on Steam and Electric Railways and the Evils of Railway Trespassing" will be considered Among other subjects to be discussed during the three day session are "Accident Problems of the Iron and Steel Industries of Electric Companies, and of General Industries," Employees Duty toward Accident Prevention," Standardization of Safety Committees and Safety Committee Work," "Fire Prevention" Industrial Education" and the 'Elimination of Labor Disputes" On Thursday, the last day of the conference, is a special medical program including a paper by Surgeon Benjamin S Warren, U S P H S, on Health Insurance," the discussion to be opened by Dr John B Andrews, secretary of the American Association for Labor Legislation, one by Dr Loyal A Shondy on 'Medical Supervision for Workmen," and one by Surgeon Joseph W Schereschewsky U S P H S, on "The Relation of the Industrial Physician to Modern Industry" In the afternoon, Dr William C Posey, Philadelphia, will speak on Industrial Eye Injuries and Their Prevention' and Mr A P Bowers of the Pennsylvania Federation of Labor will speak on 'Tuberculosis as it Affects the Workers"

Philadelphia

Pathological Society Lecture—The annual Samuel G Gross lecture of the Pathological Society and one of the series of Rush lectures for 1916-1917 was delivered Thursday evening, November 9 at the College of Physicians building by Prof Lawrence J Henderson of Harvard University who spoke on the subject of acidosis

News of Institutions about Philadelphia—At the Franklin Institute on Thursday evening November 9, 'The Fundamental Principles of Good Lighting" were explained by P G Nutting Ph D director of research laboratory, Westinghouse Electric and Manufacturing Company, Pittsburgh ——The Rush Hospital for Consumptives will open a pavilion at its country branch, Malvern, for children ranging from 5 to 10 years of age, the charge to be five dollars per week Applicants are to be examined at the city hospital before admission——Health clinics are conducted on Monday and Wednesday afternoons at the Childrens' Hospital Nurses from the social service department visit children living in the ward and teach parents how to carry out physicians' advice——The Child Federation Little Mothers' Leagues reopened, November 8 with sixty-five classes for instruction in infant care Municipal nurses and child federation volunteer workers conduct these clinics in the public schools, social centers and settlements——The division of rentals and repairs of the Philadelphia Housing Association has aided in the abatement of insanitary and illegal housing conditions by reaching the absentee landlord and urging him to improve his property——The Women's Hospital is holding dental clinics in charge of Dr Matilda Groth where children of school age are treated on Saturday mornings——The Children's Homeopathic Hospital has installed a fully equipped Roentgen-ray apparatus at a cost of nearly $2,000 The hospital has under treatment in its wards twelve cases of paralysis resulting from acute attacks of anterior poliomyelitis, also a number in the outpatient orthopedic clinic

TEXAS

Dengue—The epidemic of dengue fever continues in Floresville——Dengue is reported to be epidemic at Runge

Saving in Serum and Vaccine—The state board of health reports that from Sept 1 1915, to July 1 1916, under the system of distributing biologic products, the saving to the people of Texas was $74717 15 because of the reduction in the price of serum and vaccine points

Personal—Dr William B Collins, state health officer, Austin, sailed October 29 from New Orleans on a trip to Central and South America He expects to make a survey of the sanitation and quarantine conditions in ports of call and shipping points on the Atlantic Coast——Dr Roy W Dunlap, Palestine, left October 19 for London, where he expects to spend six months in study in an eye and ear hospital

Health Charts in Demand—The state board of health is receiving numerous requests for the health chart arranged by Dr William A Davis, Jr secretary of the board Ten lessons are included in the chart which have been arranged for use in health institutes and schools of the state The lessons include home sanitation, stimulants, personal hygiene, accidents, uninvited guests, preventable diseases, vital statistics school sanitation and social hygiene

VIRGINIA

Personal—Dr Harry B Hinchman has been appointed resident intern at the Virginia Hospital, Richmond succeeding Dr Frederick B Fletcher, resigned——Dr George G Hankins of the staff of the Eastern State Hospital for the Insane, Williamsburg, was attacked by an insane patient and sustained a fracture of the skull

Restraint of Dangerous Consumptives in Virginia—According to public health reports for Oct 27, 1916, any tuberculous person in Virginia who violates the laws prohibiting expectoration in public places and vehicles or who deliberately and continuously exposes any other person to infection may, under an act passed March 17, 1916, be restrained and detained in some suitable place for a period not exceeding twelve months, or may be required to give bond in a penalty to be determined by the court, conditioned on the cessation of the practice complained of

State Society Meeting—At the forty-seventh annual meeting of the Medical Society of Virginia, held in Norfolk, October 24 to 27, under the presidency of Dr Joseph A White, Richmond, the following officers were elected president, Dr George A Stover, South Boston, vice presidents Drs Charles S Webb, Bowling Green, Achilles L Tynes, Staunton, and William B Barham, Newsoms, secretary, Dr Paulus A Irving, Farmville (reelected), treasurer, Dr Mark W Peyser, Richmond, members of the executive council, Drs Alfred L Gray, Richmond, and Frank H Hancock, Norfolk, at large, and Dr Hunter H McGuire from the seventh district Dr Samuel T A Kent from the fifth district, and Dr T A Riley from the eighth district, Dr William F Drewry, Petersburg, was selected to succeed Dr Henry S MacLean (retired), member of the State Board of Medical Examiners, Dr Hampden A Burke, Petersburg, succeeding Dr Otho C Wright, delegate to the American Medical Association, Dr Robert C Bryan, Richmond, alternate, Dr Charles V Carrington, Richmond Roanoke was selected as the next place of meeting

GENERAL

Red Cross Magazine Moves—Mr Eliot Wadsworth, acting chairman of the central committee of the American Red Cross, announces a change in the place of publication of the American Red Cross Magazine which will hereafter be produced by the Doubleday-Page Company of Garden City Long Island The magazine will be enlarged and members will be asked on renewing their membership to pay $1 additional for subscription to the magazine

Tri-State Society Meetings—At the forty-third annual meeting of the Northern Tri-State Medical Society, held in South Bend, Ind, October 24 Dr Miles F Porter, Fort Wayne, was elected president, Dr Elmer L Eggleston Battle Creek, Mich, vice president, Dr George W Spohn, Elkhart, Ind, secretary (reelected), and Dr Harry F Mitchell South Bend, treasurer——The annual meeting of the Tri-State Medical Society of Illinois, Missouri and Iowa was held in Kansas City October 25 to 27 Iowa City was selected as the next place of meeting Dr G Wilse Robinson, Kansas City, was elected president Dr J W Martin, Des Moines, vice president and Dr Charles H Parkes, Chicago, was reelected secretary-treasurer

Heroin Addiction—At a meeting of the committee on drug addiction, of the National Committee on Prisons, discussion revealed that heroin is the favorite drug among young addicts and those of the first decades of life In view of this fact the committee passed resolutions to the effect that since heroin is not a drug of sufficient value to preclude its being replaced by other drugs or measures that do not develop and maintain vice and crime it is recommended that federal legislation be adopted to prevent the importation, manufacture and sale of this dangerous habit forming drug in the United States The committee on drug addiction consists of Dr Simon Baruch, chairman, Drs Samuel W Lambert, Fredrick Peterson and Frederick Tilney, New York, and Ex-Surg-Gen Charles F Stokes, U S Navy

Bequests and Donations—The following bequests and donations have recently been announced

Brooklyn Home for Consumptives, $5,000 by the will of Mrs Albert Bierstadt.

Chicago Lying In Hospital, a donation of $100 000, by Mrs James Hobart Moore

Methodist Hospital and Maternity Hospital, Philadelphia each $5 000, contingent on the legatees dying childless, by the will of Amelia M Boyd

Philadelphia Home for Incurables $10 000, to endow two beds in memory of his parents Dr William L and Martha H Wright and $5 000 each to the Pennsylvania Hahnemann Jewish, Jefferson and German Hospitals Philadelphia the Childrens Aid Society and Society to Protect Children from Cruelty and the residue of the estate to the Home for Incurables by the will of Major T Morris Wright

For the equipment and endowment of the new library of the New York Medical College and Hospital for Women as a memorial to his son the late George Carlton Dominick by Mr W Dominick, New York City

Red Cross Base Hospital Units—The following base Red Cross Hospital units have already been organized and the money for their equipment subscribed New York, six units, Chicago, four units, Boston, three units, Cleveland, Philadelphia and Detroit, each one unit In addition to these sixteen units, hospital units are in process of organization at the following points, but the money for their equipment has not as yet been subscribed Philadelphia St Louis, Cincinnati, the Mayo Clinic, Rochester, Minn, Johns Hopkins Hospital, Baltimore, Rochester, N Y Nashville, Tenn, and San Francisco each one unit These hospitals are purely military units, organized at the request of the medical department of the Army and Navy and equipped with a view to the needs of the military service The muster-in pledge requires only national service when called into the military service of the United States, and the judge advocate-general of the Army has decided that this authorizes the calling out of these units by the president in time of war or when war is imminent

Causes of Death for 1915—A preliminary announcement with reference to mortality in 1915 issued by the Bureau of the Census indicates that nearly one third of the 909 155 deaths reported for that year in the registration area," which contained approximately 67 per cent of the population, were due to three causes—heart diseases, tuberculosis, and pneumonia—and nearly two thirds were charged to twelve causes —the three just named together with Bright s disease and nephritis cancer apoplexy, diarrhea and enteritis arterial diseases diabetes influenza, diphtheria and typhoid fever

HEART DISEASES

Deaths from heart diseases (organic diseases of the heart and endocarditis) in the registration area in 1915 numbered 105 200 or 156 2 per 100 000 population In 1900 it was only 123 1 per 100 000

TUBERCULOSIS

Tuberculosis in its various forms claimed 98,194 in 1915, of whom 85,993 died from tuberculosis of the lungs From 1904 to 1915 the death rate from tuberculosis in all its forms fell from 200 7 to 145 8 per 100 000 the decline being continuous from year to year This is a drop of more than 25 per cent Even yet tuberculosis causes more deaths annually than any other form of illness except heart diseases and about 46 per cent more than all external causes—accidents, homicides and suicides—combined

PNEUMONIA

Pneumonia (including bronchopneumonia) caused 89 326 deaths in the registration area in 1915 or 132 7 per 100 000 This rate is higher than for 1912 1913 and 1914 The rate for 1914 127 per 100 000 was the lowest on record The death rate from this disease has shown a marked decline since 1900, when it was 180 5 per 100 000 Its fluctuations from year to year have been pronounced

NEPHRITIS

The only remaining death rate higher than 100 per 100 000 in 1915 was that for acute and chronic nephritis 104 7 The total number of deaths due to these maladies in 1915 was 70,500, of this number, 64,480 were caused by chronic nephritis and 6,020 by acute nephritis The mortality rate from these two cases increased from 89 per 100,000 in 1900 to 103 4 in 1905, fluctuated more or less between 1905 and 1912, and has shown little change since the last mentioned year

CANCER

Next in order of deadliness come cancer and other malignant tumors, which caused 54,584 deaths in 1915 Of these, 21,221 or nearly 39 per cent, resulted from cancers of the stomach and liver The death rate from cancer has risen from 63 per 100,000 in 1900 to 81 1 in 1915

Apoplexy was the cause of 53,397 deaths, or 79 3 per 100,000 The rate from this disease has increased gradually, with occasional slight declines, since 1900, when it stood at 67 5

DIARRHEA AND ENTERITIS

Diarrhea and enteritis caused 48,325 deaths in 1915, or 71 7 per 100,000 This rate has shown a marked falling off in recent years, having been 90 2 in 1913 and 79 4 in 1914 Nearly five sixths of the total number of deaths charged to these causes in 1915 were of infants under 2 years of age

ARTERIAL

Arterial diseases of various kinds—atheroma, aneurysm, etc—caused 15 685 deaths in 1915, or 23 3 per 100,000 This rate is higher than that for 1914, and is much higher than that for 1900, which was 6 1

DIABETES

Diabetes was the cause of 11,775 deaths, or 17 5 per 100,000 The rate from this disease has risen almost continuously from year to year since 1900, when it was 9 7 per 100,000

INFLUENZA, DIPHTHERIA AND CROUP

Influenza caused 10 768 deaths in the registration area in 1915 the rate being 16 per 100,000 The rate was higher in 1915 than during several years preceding, but was somewhat lower than the average between 1901 and 1910 No other epidemic disease produced a death rate as high as 16 per 100,000 in 1915 The fatal cases of diphtheria and croup—which are classed together in the statistics, but practically all of which are of diphtheria—numbered 10,544 or 15 7 per 100 000, in that year, the rate having fallen from 43 3 in 1900 This decline of more than 60 per cent is relatively greater than that shown by any other important cause of death except typhoid fever

THE TYPHOID RATE

The mortality rate from typhoid fever has shown a most gratifying and remarkable decline since 1900 having dropped from 35 9 per 100,000 in that year to 12 4 in 1915, the decrease amounting to nearly two thirds This decline is greater, relatively, than that shown for any other important cause of death The total number of deaths due to typhoid fever in 1915 was 8 332 Improved methods of sanitation, including the betterment of the water supply and sewerage systems the campaign against the fly, and other preventive measures have proved their efficacy in a striking manner by a reduction of almost two thirds in the typhoid death rate during a period covering but a decade and a half

WHOOPING COUGH, MEASLES AND SCARLET FEVER

The principal epidemic maladies of childhood—whooping cough, measles and scarlet fever—were together responsible for 11 489 deaths of both adults and children or 17 1 per 100 000, in the registration area in 1915, the rates for the three diseases separately being 8 1, 5 4 and 3 6 respectively In 1913 measles caused a greater mortality than either of the other diseases but in 1914 and 1915 whooping cough had first place In every year since and including 1910, as well as in several preceding years, measles has caused a greater number of deaths than scarlet fever The mortality rates for all three of these diseases fluctuate greatly from year to year The rates for measles and scarlet fever in 1915 were lowest since 1900 while that for whooping cough was somewhat above the lowest recorded rate for this disease, 6 5 in 1904 although far below the highest, 15 8 in 1903

THE SAFETY-FIRST ' CAMPAIGN

The "safety-first campaign, inaugurated a few years ago, has apparently borne good fruit For 1913, 54,011 deaths from accident were reported for 1914 the corresponding number was reduced to 51,770, and for 1915 to 51,406, and during this period there was not only an increase in the population of the registration area as it existed in 1913, but an increase in the extent of the area itself The rate per

100 000 population for accidental deaths fell from 85 3 in 1913 to 78 5 in 1914 and to 76 3 in 1915 There has been a considerable reduction in fatalities due to railway, street-car, mine, and machinery accidents, and the increase in those resulting from automobile accidents has not been as rapid as the increase in the number of machines in use

Deaths due to railway accidents and injuries totaled 6 652 in the registration area in 1915, or 9 9 per 100 000 This number includes fatalities resulting from collisions between railway trains and vehicles at grade crossings This death rate is the lowest on record and shows a marked decline during the past ten years

Deaths resulting from street-car accidents and injuries numbered 1 555 or 2 3 per 100,000 This rate like that for railway fatalities is the lowest on record and shows a material falling off during the past ten years

Automobile accidents and injuries caused 3 978 deaths in 1915, or 5 9 per 100 000 There has been an increase in this rate from year to year, but, as already mentioned, the increase has not been so rapid as that in the number of machines *in* use

The number of deaths from mine accidents and injuries in the registration area in 1915 was 2 009, corresponding to a rate of 3 per 100 000 This rate shows a material decline as compared with the corresponding figure for 1913, 3 6 and a very great decline as compared with that for 1907 4 8, which is the highest on record

Deaths caused by machinery accidents in 1915 numbered 1,257, or 1 9 per 100 000 This rate also shows a marked decline during recent years, the corresponding figures for 1913 and 1914 being 2 4 and 2 respectively The highest recorded rate from this cause is 2 5, for 1907

SUICIDES

The number of suicides reported for 1915 was 11 216, or 16 7 per 100 000 population The suicide rate has not varied very greatly during the past ten years

DEATHS CAUSED BY FIREARMS

The census figures bring out the astonishing fact that during the year 1915 firearms caused more deaths than railroad accidents more than five times as many as street car accidents, nearly as many as railroad and street-car accidents combined and more than twice as many as automobile accidents The total number of deaths due to the use of firearms in the registration area in 1915 was 7 994, corresponding to a rate of 11 9 per 100 000 Of these deaths 3 608 were suicides 2 885 were homicides, and 1,501 were accidental (including those concerning which the status as to suicide homicide, or accident was in doubt) The suicidal use of firearms has increased from year to year since 1913, the frequency of accidental deaths due to their use shows a slight decline during recent years, and the homicidal use of firearms show a decline as compared with 1913 and 1914 but an increase as compared with 1910, 1911, and 1912 No separate data as to homicides by firearms for the years prior to 1910 are available

FOREIGN

Nobel Prizes Reserved—It was announced from Sweden, October 28, that no Nobel prizes for science or medicine would be awarded for this year, but that the money would be reserved for 1917 The Nobel prize for 1915 has also been reserved and will be added to the special fund

Prize in Ophthalmology—The German Ophthalmologische Gesellschaft has divided between Lindner of Vienna and Ohm of Bottrop the von Graefe-von Welz prize for the best article published in 1911-1913 in the *Archiv fur Ophthalmologie* Their articles were on trachoma and inclusion blennorrhea, and on miner s nystagmus

Gaining an Hour of Daylight—The Prussian higher authorities have been investigating the effect of setting the clocks forward an hour during summer, as was done from May to September in Prussia The verdict among manufacturers and other establishments has been extremely favorable All extol the advantages of the plan, and the Berlin Chamber of Commerce advocates setting the clock forward April 1 instead of waiting for May, next year The consensus of opinion among the worker seems to be also in favor of it

South American Society for Microbiology, Pathology and Hygiene—A society was organized in South America with the above title, at the National Medical Congress held at Buenos Aires in September The new society is to publish a review simultaneously at Rio de Janeiro and at Buenos Aires, in Spanish, Portuguese, French, English and German The editorial staff consists of R Krauss, director of the bacteriologic institute of Buenos Aires and O Cruz, director of the similar institution in southern Brazil and chief health officer of Rio de Janeiro when yellow fever was eradicated there

Women in the German Universities—The *Deutsche medizinische Wochenschrift*, September 21, states that women form 10 5 per cent of the students enrolled in the German universities now, in contrast to 4 8 per cent five years ago As so many of the students are serving with the troops, the women form actually over 66 per cent of those taking the courses now The increase is the largest in the medical department, 25 3 per cent are studying medicine, against 20 per cent five years ago The actual numbers are 1,394 in 1916 against 582 five years ago

Infant Mortality in Berlin—The *Deutsche medizinische Wochenschrift* of September 28 states that the cool summer and the extreme attention paid to infant welfare have exerted a progressively favorable influence on infant mortality in Berlin This is especially evident on comparing the mortality for July, 1916, with that for the same month the year before In 1916 there were only 210 deaths among infants during July, while the corresponding figure for July, 1915, was 410 These figures represent in 1916 only 11 26 per cent of the total mortality, in contrast to the 19 12 per cent of the year before The general mortality in Berlin is also lower than it was in July, 1915

Deaths in the Profession Abroad—B Riedel, aged 70 professor of surgery at the University of Jena and chief of the surgical clinic until 1910 when he resigned on account of an affection requiring amputation of one leg He was a pioneer in certain phases of abdominal surgery and is said to have been the first to operate for reduction of dislocation of the hip joint The last few years he has devoted himself almost exclusively to the questions connected with artificial legs utilizing his own personal experiences——E Richter, aged 79, formerly professor of surgery at the University of Breslau He was trained as an army surgeon and long kept up his connection with the army and published numerous works bearing on military matters effects of bullets, etc Since 1880 he has been editor of the *Zentralblatt fur Chirurgie* which, with Konig and von Volkmann, he founded then——J Pollak, professor of otology at the University of Vienna——G Salomon, professor of physiologic chemistry at the University of Berlin, aged 67 His death was the result of a subway accident——W Reiss, professor of skin and venereal diseases at the University of Cracow, aged 50

Special Typhus Service in Mexico Discontinued—The April bulletin issued by the Mexican National Board of Health just received, relates that an official order put an end to the special typhus service described in The Journal, Aug 5, 1916, p 447 The regular public health service is considered capable of keeping the disease under control now and the extra force was dismissed During the month there were 1,075 new cases of typhus reported and 276 visits were made to the seventy churches under inspection in Mexico City and nearby communities The bulletin states that a total of 4,763 persons were denied admittance to the churches, including 1,771 "notoriously dirty," 2,238 who were carrying lunch, 397 beggars and 357 sick persons Of the 44 theaters inspected 37 were compelled to clean up and 1,149 notoriously dirty persons were turned away There are twelve establishments for bathing and 31,124 persons were given a lice-killing bath and 6 870 were placed in the hands of the barber The chief, A Pruneda, is in charge of the regular service, with ten medical inspectors In regard to the course of the epidemic, the weekly report of the United States Public Health Service, October 20 reports 699 cases of typhus at Mexico City between August 28 and September 23

Foreign Exchanges—The mail the last six days has brought a number of German and Austrian exchanges Each is stamped 'Released for exportation by the military authorities' The *Medizinische Klinik* has this printed on the title page as *Zur Ausfuhr zugelassen Sanitatsamt d mil Institute No 1386, 1403, 1404, 1413 Z* In the issue for two weeks later the numbers are *No 1479 1490, 1491, 1507 Z*, and the following week *No 1541, 1572, 1581, 1589, 1598 Z* The *Deutsche medizinische Wochenschrift* has merely stamped on the cover *Vom Sanitatsamt des 19 Armeekorps zur Ausfuhr zugelassen* A drug journal from Berlin has stamped on the cover *Vom Oberkommando i d Marken zur Ausfuhr i d Ausland zugelassen* The *Wiener klinische Wochenschrift* has merely *Zensuriert* stamped on the cover Russian exchanges have been coming regularly during the last two years as before, with few exceptions, and they are always stamped with "Rapid Military Censoring," *Bystro voennoiu tsenzuroi No 693* or other number The two *Zeitschrifts* in this batch of foreign mail are stamped on the cover *Tauschexemplar Auswechselungsanstalt zugleich Ausfgsstelle XIX Armeekorps, Leipzig* The exchanges are all of dates between September 17 and October 1

CANADA

University News—War has ravaged the attendance at the University of Toronto In some departments the enrolment is just one half of that in 1913-1914 In medicine in 1916-1917 the total registration is 399, in 1915-1916 it was 614, in 1914-1915 it was 660

Hospital News—Five hundred beds are now available for returned soldiers at the new hospital for the insane at Cobourg, Ont, and will be put into service as soon as the hospital is handed over to the Canadian Hospital Commission In four or five months the Ontario government will have completed additional accommodation in that institution for 700 to 800 patients——The Canadian Hospital Commission wishes it to be known that they have now established an artificial limb institute in Toronto, equipped to make the most improved artificial limbs The Dominion government will furnish all artificial limbs free of charge to returned soldiers who require them

Personals—Dr John R Irwin, Cobourg, Ont who has been on service with the R A M C, and who was awarded the Military Cross for conspicuous bravery, returned to Cobourg, November 2——Dr Charles K Clarke, superintendent of the Toronto General Hospital, has resigned and will devote his time to social work and scientific medicine and to his duties as dean of the Medical Faculty of the University of Toronto——Capt Alfred K Haywood, who was assistant superintendent of the Toronto General Hospital but who has been at the front since war was declared, has been given command of the Canadian Convalescent Hospital, Woodcote Park Epsom, England——It is reported now that Surg-Gen Carleton Jones C M G, director-general of the Canadian army medical services in England, will remain in England and may continue in his present position——Dr Clarence Young, Guelph Ont, who enlisted last spring and joined the R A M C, has been awarded the Military Cross for bravery on the field——Drs Julia Thomas and Jennie Smillie Toronto, recently gave a tea in honor of Drs Jane P Sproule Victoria Reid and Isabella S Wood, who are going abroad in a few days for overseas military work——Dr Catherine Travis Montreal, who spent six months in Serbia with the American Red Cross has returned to Montreal——Lieut-Col J George Adami professor of pathology in McGill University, Montreal, has returned from England——Capt Robert D Sanson Calgary Alta, who has been abroad with the C A M C, has been declared unfit for further service

WAR NOTES

Antitoxin to Warring Nations—Health Commissioner Haven Emerson announced to the subcommittee on budget of the board of estimate of New York City that the board of health has sold $205 000 worth of antitoxin to France, England and Italy since the outbreak of the pan-European war

Physicians for Service in Palestine—Physicians and nurses are wanted to join the American Zionist medical unit for Palestine which is about to be formed by the women's Zionist organization Hadassah" Those who are interested are requested to communicate with Miss Henrietta Szold, 2 Pinehurst Ave New York City

Collection of Medical Literature on the War—The chief of the medical department of the German army, von Schjerning has published an appeal to physicians for aid in collecting for the library of the Military-Medical Academy at Berlin every work bearing on the medical, surgical and sanitary aspects of the war, the whole to form a complete library of medical war literature Authors are urged to send copies of their work to the Kaiser Wilhelms Akademie

Netherlands Ambulances at the Seat of War—Dr Wiederhold has left Holland and arrived at Christiania on his way to Petrograd to join the Netherlands Ambulance with the Russian troops and relieve Dr Bijleveld who will return home Dr Van Dijk of Rotterdam has gone to join the Netherlands Ambulance at Saloniki, going by way of London and Paris, accompanied by four nurses Drs Hijman and De Grott also left recently to join the Netherlands Ambulance in Germany It is stationed at Olmutz

American Red Cross Work in Bavaria—The American Red Cross Hospital in Munich has been administering to wounded soldiers for more than two years On account of the tension between the United States and Germany, the committee in charge of the hospital inquired whether the continuation of their activities was agreeable to the German community, whether the hospital should be kept open The municipal authorities emphatically requested that the hospital should continue its activities as before

Scarcity of Auto Tires in Switzerland—Our Basel exchange brings an appeal from the president of the Swiss Aerztekommission to physicians for their support in a contemplated appeal to the higher authorities to find ways and means to obtain tires for the automobiles of medical men, in the interests of the sick as well as of the physicians themselves At present many physicians are unable to use their automobiles from inability to procure tires The wholesale dealers allege they have none in stock, and the army authorities will not encroach on their reserves

War Losses in the Profession in Germany—The *Munchener medizinische Wochenschrift* of September 26, quotes statistics showing that the German casualty lists, 1 to 600, have contained the names of 343 physicians, including 104 active army or navy surgeons, 128 physicians of the reserves, 102 assistant surgeons and 8 civilian physicians, 185 have died of disease, a total of 528 deaths among the members of the medical profession with the German army and navy In addition to these, 176 have been severely and 553 slightly wounded, 156 have been taken prisoners, and 87 are missing The total figure is thus 1,500

Ambulance Activities—Twenty-five experienced American ambulance drivers with the French Army arrived at Saloniki, November 5, and will be assigned to duty with the Red Cross unit at that point They are to be formed into a new section in charge of Lovering Hill, New York and will operate thirty cars——A Piatt Andrews chief inspector of the American Ambulance Corps in France, hopes to take back fifty additional men when he returns to France in December——Thirty volunteer ambulance drivers and two orderlies sailed from New York October 21, for service with the American Ambulance in France

Social Insurance After the War—Hanauer of Frankfurt, Germany, prophesies that after the war the benefits of social insurance will be extended to larger circles than at present, possibly to all with incomes up to $1 250 or thereabouts More than half the population are now enrolled on the insurance lists, and he is confident that ere long five sixths will be included The temporary war regulations for care of prospective mothers, for children etc, will be enlarged and rendered permanent The whole trend will be to enlarge the scope of existing measures Physicians will have to adjust themselves to this change, and there is no doubt, he says, that the day of 'officialization' of physicians will be materially advanced thereby Stier-Somlo asserts that the whole matter of sickness insurance should be taken over into the hands of the state, and its expenses should be met by a special tax for the purpose, declaring that the whole nation profits by improved conditions of public health, and the social insurance system has proved a school of hygienic living and of economics for all connected with it

OUR TROOPS ON THE BORDER

Filipino as Hospital Director—Governor General Harrison has named Assistant Director Dr Fernando Calderos to succeed Dr William E Musgrave, resigned as director of the Government Hospital, Manila

Typhus at El Paso—A case of typhus fever has been discovered in the state jail at El Paso and the case is believed to have originated in a Mexican house near the camp of the Thirty-Third Michigan Infantry On account of this discovery, orders have been issued by General Kirk that no more laundry work shall be done for the men by Mexican women, that no Mexican shall be allowed in the camp and that men keep away from the Mexican homes

New Ambulances for Army—A medical board consisting of Maj Robert E Noble, Allie W Williams, Percy L Jones and Capt Arthur C Christie, M C, U S Army, has approved the adoption of a new standard type of army ambulance and the organization of new ambulance company units Each company has twelve motor ambulances and one three-fourths ton repair truck Four of these companies have been organized and are in service along the southern frontier

LONDON LETTER

London, Oct 16, 1916

The Insurance Act

The insurance act is, of course, largely on its trial Signs of future trouble with the physicians are not wanting and, as foreshadowed in previous letters to The Journal, important modifications are likely But in consequence of the war, in which nearly half of the medical profession is engaged, the problem is left in abeyance One of the difficulties, however, has come to a head The immediate origin of the trouble is a new regulation issued by the insurance commissioners to the effect that when provision for medical services over and above those provided by the panel physician is made by any public authority after consultation with the local medical committee and after due notice, each panel physician shall take such steps as are necessary to enable the patient to take full advantage of such provision This regulation implies that consultants and specialists may be appointed under the national insurance scheme, and that when they are appointed it will be the duty of panel physicians (1) to give to the expert all necessary information as to the patient's previous history and the physician's diagnosis and treatment, (2) to furnish a specimen for laboratory examination, and (3) to attend with the patient for consultation with the expert in certain cases These new duties, for which extra payment has not been offered, are regarded as an imposition by many of the panel physicians The new regulations have a further significance They constitute the beginning of the revolution in the health administration of the country It seems probable that an attempt will be made to link up with the insurance scheme the great general hospitals and the special hospitals for diseases of the eye, ear, nose and throat A further development possible is a linking up of the insurance scheme with the great public health services With the example of the army providing all medical services for a large fraction of our male population, it cannot any longer be contended that the prevention of disease and the cure of disease are separate questions At present the physicians dealing with prevention and the physicians dealing with treatment in civil life are unrelated in an administrative sense This absurdity is made clear by a single example—the treatment of tuberculosis The great hope in this case is prevention, and as the patient himself is the source of infection, treatment and prevention become merely aspects of the same problem There is a feeling in the public mind that a thoroughly efficient whole time medical service could be obtained at the cost of the present panel service, and there are many distinguished members of the profession who would welcome the change As soon as the war ends, a large number of highly trained physicians will return to civil life, the present system, with its buying and selling of medical practices, affords them, unless they have private means, little hope of acquiring a competence in reasonable time Yet it is scarcely to be doubted that they are capable, if given an opportunity, of lifting medical practice in this country to a higher level It is evident that the insurance commissioners are looking ahead and viewing their great responsibilities in a serious frame of mind

Falling Birth Rate Lowest Figure for Scotland Since Registration

The sixty-first annual report of the registrar-general for Scotland, dealing with the year 1915 has just been issued The number of births registered during the year totaled 114 181, this being the smallest number in any year since 1869 It is 12 363 less than the average of the preceding ten years, and is 19,344 less than that of 1903, in which year the largest annual number of births that had ever occurred in Scotland was recorded The birth rate for 1915 was 23 86 per thousand, the smallest since the institution of national registration in 1855 It is 3 1 less than the mean of the birth rates of the preceding ten years The births of illegitimate children numbered 7 875, and constituted 6 9 per cent of the total births The number is 1 157 less than the mean of those of the preceding ten years Marriages registered during the year numbered 36,272 the largest number in any year since 1855, and 3 930 more than the average during the preceding ten years The marriage rate was 7 58 per thousand, or 0 69 more than this average, and was higher than those of all years since 1855, with the exceptions of 1873 and 1874 As explained in previous letters the increase is due to the war The death rate was 17 06 Although 1 23 more than the mean it is less than those of all years from 1855 to 1895 The infantile mortality rate of the year was high, it amounted to 126 5 per thousand births It was 14 9 more than the ten year mean and the highest since 1901 An additional table is incorporated in the report to show the effect of war conditions on the birth and marriage rates This is tested by comparing the war time monthly rates with the means of four corresponding rates before the war By this test it is found that there was a marked fall in the birth rate commencing nine months after the declaration of war, that is, in May, 1915, and continuing up to the end of 1915

PARIS LETTER

Paris, Oct. 12, 1916

The War

REORGANIZATION ON A NEW BASE OF HOSPITAL ARRANGEMENTS FOR THE SICK AND THE WOUNDED OF THE ARMY

The character of the present war has gradually introduced changes into the ideas which have heretofore reigned in all the services of the army The health service of the army has not escaped from this influence The system originally employed for the transport of the wounded and sick into the interior of the country, being designed for the requirements of an open war, very early showed that it left much to be desired from the point of view of maintaining the effectiveness of the army It has been remarked that the wounded and the slightly sick, when sent so far from the front remain much too long in the hospitals and afterward in the depots of their regiments representing a very considerable loss to the forces It was soon learned that it was important to avoid sending to the interior of the country those wounded and sick who were likely to be able to return to service after a short delay, and that these should, therefore be kept close to the front The result is that at present hospitalization in the zone of the armies is very much more important than that in the interior of the country Indeed, many hospitals in the interior have been closed, while a great number of such institutions have been created in the army zone

According to the new instructions the sick and wounded of three categories should be maintained in the army zone These are

1 Those whose condition does not admit of transport to a great distance (*a*) Those who must be kept where they are (moribund patients, patients with grave shock, tetanus, delirium and those who have just undergone serious operation) (*b*) The seriously wounded whose condition permits transport to a short distance (a maximum of 20 kilometers [12½ miles]) Such are patients presenting penetrating wounds of the skull of the chest and of the abdomen, fracture of the upper third of the femur, wounds of the knee joint by artillery projectiles or hand grenade, injury to the spinal cord (*c*) Patients with contagious disease who must be isolated in the special hospitals in the army zone

2 Men slightly wounded or slightly ill, who will probably be cured within four or five weeks

3 The men temporarily out of action' on account of fatigue, slight illness or unimportant accident

The evacuation hospital (l hopital d'evacuation) is the essential sanitary formation On it falls the duty of sorting and classing the sick and wounded It retains those whose condition does not permit of their being transported and evacuates the others either on the base hospitals of the army, or to the interior of the country Those stations, even when placed near the first line in contact with the troops, have become during the present war a relatively stable formation, remaining in the same place for many weeks They are not, therefore, summary, makeshift installations as in an open war According to the latest instructions, every evacuation hospital should include a covered place for automobile ambulances, reception rooms, separate wards for the wounded who are obliged to remain in bed, for those who can sit up, and for the 'temporarily out of action" who are awaiting their distribution, other wards for the wounded and sick who cannot be transported, and isolation wards for the contagious diseases The large evacuation hospitals of the first line are required to have several operating rooms and dressing rooms For the others, it suffices to have one operating room with two tables, and one large dressing room with several tables

On the other hand, besides the sanitary formations for the reception of the untransportable sick and wounded and the depots for the "temporarily out of action," orders have been given for the utmost development of the hospital resources of the army for the slightly sick and wounded, that is, for those who are expected to become well within four or five weeks It is laid down that the hospitals of this class should have a capacity of 2 per cent of the army

THE PHYSICOTHERAPIC CENTER OF THE GRAND PALAIS PARIS

The physicotherapic annex for physical reeducation at the military hospital of the Grand Palais deserves to be known for its extensive and remarkable installation It receives all those wounded who belong to the military governorate of Paris, and of the Third Region (Rouen), and it is certainly the center which treats the greatest number of wounded The wounded arriving at Grand Palais pass first to the mensuration service where their injuries are examined and their condition determined by precise measurement Thus, on the registration form are noted the length and circumference of the injured limb and of the whole limb, the angles of flexion and extension of the articulations, the electric excitability of the nerves and muscles, etc The wounded then pass before the medical commission, which decides on the treatment to be applied Each man receives a prescription slip, on the obverse of this are written the treatments, and on the reverse are spaces in which will be marked his attendance at the proper services At fixed dates the man passes again before the mensuration service, which repeats the measurements already mentioned and notes them on the slip He then goes to the medical commission which, taking into consideration the effects of the treatment prescribes its continuation or modification At the end of their stay at the Grand Palais, the wounded are divided into two categories, those who are unfit to resume their service and who are therefore sent away for convalescence or classed in the auxiliary service or discharged from the army, and those who, being completely cured, are returned to their corps The last receive a certain amount of drill in order to restore the habit of the use of arms and of military movements

The number undergoing this treatment is frequently more than 2,200, 80 per cent returning completely cured or sufficiently so to enable them to return to the service The incapacity measured at the time of entry averages 25 85 per cent, and on discharge 1 44 per cent

Recently the Union of Foreign Colonies in France in favor of victims of the war has offered to the disabled workshops of every kind tailoring, shoemaking, joinery locksmith work draftsmanship, accountancy (The Journal, July 22, 1916, p 297)

Death of Jean-Joseph Picot

Dr Jean-Joseph Picot, formerly professor of clinical medicine at the Faculte de medecine de Bordeaux has just died at the age of 77 Born, Oct 29 1839 at Saint-Nicolas du-Port (department de Meurthe-et-Moselle), Picot was educated at the Faculte de medecine de Strasbourg After the war of 1870 he left Alsace and was appointed associate professor at the school of medicine at Tours In 1878, at the time of the creation of the Faculte de medecine at Bordeaux he was appointed professor of medical pathology (*pathologie médicale*) The following year he succeeded Gintrac in the chair of clinical medicine, which he occupied until his retirement

Since 1887, Picot was national correspondent of the Academie de medecine He wrote a work entitled 'Les Grands Processus Morbides" (pathology), which was crowned by the Academie des sciences (Prix Montyon) in 1877, and "Leçons de Clinique Medicale' in 1882

Marriages

Charles Townsend Hamaker, M D, Philadelphia, to Miss Margaret E Morse of New York, at Beaver Falls, Pa, recently

Margaret Castex Jones M D, Goldsboro N C, to Samuel Booth Sturgis, M D, of Philadelphia, July 6

Howard Bradford Boone, M D, Chandlerville, Ill, to Miss Marguerite Potter of Decatur, Ill, October 27

Isadore H Fuhs M D Canton, Ohio, to Mrs Flora Luthie of Ashtabula Ohio at Cleveland October 25

Don Rhodolph Flower, M D, Tripoli, Wis, to Miss Clara Hirsch of Park Falls Wis, October 19

Lannes Irving Condit, M D, to Miss Gladys Lou Race, both of Detroit, October 28

J Clyde Markel, M D, to Miss Carolyn Owen, both of Pittsburgh, October 18

Deaths

Edward William Schauffler, M D, Kansas City, Mo, College of Physicians and Surgeons in the City of New York, 1868, aged 77, a Fellow of the American Medical Association, president of the Missouri State Medical Society, 1878-1879, a fellow of the American Academy of Medicine and a member of the American Climatological Association, lieutenant captain and adjutant of the One Hundred and Twenty-Seventh New York Volunteer Infantry, during the Civil War, clinical professor of internal medicine in the University of Kansas, one of the organizers of and a teacher in the Kansas City Medical College, a specialist on diseases of the lungs and heart, formerly a member of the state board of health and director of the Missouri State Sanatorium for Tuberculosis, died at his home, October 29, from heart disease

Henry Kern Leake, M D, Dallas Texas, Kentucky School of Medicine, Louisville, 1869, aged 69, a member and once vice president of the State Medical Association of Texas, and president of the Dallas County Medical Society, professor of gynecology in the Southwestern University Medical College, Dallas, a Confederate veteran, for more than forty years a practitioner of Dallas, where he established the first private sanatorium, founder and editor of the *Texas Medical Record* once president of the health board of Dallas, died at his home, October 29, from nephritis

Edgar Alexander Mearns, M D, Lieutenant-Colonel, M C, U S Army (retired), College of Physicians and Surgeons in the City of New York 1881, aged 60, a Fellow of the American Medical Association, who entered the army as assistant surgeon, Dec 3 1883, and after twenty-six years' service was retired with rank of lieutenant-colonel, Jan 1, 1909, on account of disability in line of duty, who had devoted much time of late years to travel and the collection of zoologic specimens for the Smithsonian Institution, Washington, died at his home in Washington D C November 1

Phil C Naumann, M D, Burlington, Iowa, State University of Iowa, Iowa City, 1887, aged 55, president and medical director of the German-American Life Insurance Company of Iowa Burlington, a member of the common council, 1894, and for two terms mayor of Burlington, a member of the board of trustees of the Burlington Hospital, died near his office October 16, from cerebral hemorrhage

Julius H Eichberg, M D, Cincinnati, Miami Medical College Cincinnati, 1889, aged 57, a Fellow of the American Medical Association, formerly dean and professor of pharmacy in the Cincinnati College of Pharmacy, professor of materia medica and therapeutics in his alma mater, a specialist in diseases of the stomach, died in French Lick Springs, Ind, November 2, from heart disease

Walter William Irving, M D, Los Angeles, Hahnemann Medical College, Chicago, 1897, aged 49, formerly oculist and aurist to the Protestant Orphan Asylum, Milwaukee, Wis, a specialist in diseases of the eye, ear nose and throat, died in Los Angeles, October 13, from septicemia due to a wound of the finger inflicted accidentally during a surgical operation, two months before

Edward O Plumbe, M D, Chicago, Eclectic Medical College of the City of New York, 1868 New Orleans School of Medicine 1869 aged 78, a veteran of the Civil War, formerly surgeon of the Chicago Milwaukee and St Paul Railway at Rock Valley, Iowa, acting assistant surgeon, U S Army, and U S P H and M H Service, died at his home October 22

Richard Frederick Winsor, M D, Omaha, College of Physicians and Surgeons Chicago, 1906, aged 35, formerly a Fellow of the American Medical Association and a member of the staff of the Peoria State Hospital, South Bartonville, Ill, from 1907 to 1912 instructor in pathology at Creighton Medical College, died at his home, Omaha, November 21, from pneumonia

Merari Bunajah Stevens, M D, Defiance, Ohio, University of Michigan, Ann Arbor, 1869, Bellevue Hospital Medical College, 1876, aged 73, a Fellow of the American Medical Association, one of the founders and for several terms the president of the Defiance County Medical Society, a veteran of the Civil War, died at his home, October 19, from heart disease

Edward Sydney McKee, M D, Cincinnati, Medical College of Ohio, Cincinnati, 1881, aged 58, a Fellow of the American

Medical Association and a well known obstetrician and gynecologist of Cincinnati, who had traveled extensively of late years, died in a hospital in Quito, Ecuador, South America, October 20, from malarial fever

John Savile Lees, M D, Norristown, Pa , University of Pennsylvania Philadelphia, 1863, aged 76, surgeon of U S Volunteers during the Civil War, who, after leaving the army, did not practice medicine, but was a woollen manufacturer, died at his home in Bridgeport, Norristown, October 9, from pneumonia

William Lee McKibbin, M D, Amaranth, Pa , University of Pennsylvania, Philadelphia, 1869, aged 78, a veteran of the Civil War, formerly school director and overseer of the poor of McConnellsburg Pa , a practitioner of Fulton County for forty-seven years, died at his home, October 12, from injuries received by a fall

Louis Chamberlain Purington, M D, Boston, Hahnemann Medical College, Chicago 1874, aged 71, a well known temperance worker and formerly national superintendent of the department of health and heredity of the National Woman's Christian Temperance Union, died at her home in Dorchester, Boston, October 26

George W Rightenour, Sheridan, Mont (license, Montana 1893), aged 77, a practitioner since 1862, a member of the Medical Association of Montana, once mayor of Sheridan clerk of the school board for several years and for five years chairman, a veteran of the Civil War, died at his home, October 15

John Campbell Spencer, M D, San Francisco, College of Physicians and Surgeons in the City of New York, 1885, aged 55, a Fellow of the American Medical Association, a urologist and assistant professor of genito-urinary surgery in the University of California, died at his home, October 19

George Lesser, M D, Brooklyn, New York University New York, 1897, aged 46, for many years a practitioner of the east side of Manhattan, director of the Jewish Maternity, Beth Israel and Mount Sinai hospitals and the Montefiore Home, died at his home October 22 from asthma

David N McBride, M D, Hillsboro Ohio, Cincinnati College of Medicine and Surgery 1868, aged 76, formerly a Fellow of the American Medical Association, a pioneer practitioner of Highland County, Ohio, died at his home, June 29, from arteriosclerosis

Percy Guy Davis, M D, Deerfield Mass , Baltimore Medical College 1896, aged 49, a member of the Massachusetts Medical Society, for several years president of the Deerfield Village Improvement Society, died in his office, October 20, from heart disease

William Jacob Coppernoll, M D, Newark N Y , University of Michigan Ann Arbor, 1887, a Fellow of the American Medical Association and a specialist on diseases of the ear, nose and throat, died at the home of relatives in Laconia, N Y October 14

Robert C Westphal, M D, Yorktown, Texas, Starling Medical College Columbus Ohio 1902, aged 46 a Fellow of the American Medical Association, died in the Cuero (Texas) Hospital October 21, after an operation for the removal of the right kidney

Charles Westly Lester, M D, Guthrie Ky , Vanderbilt University, Nashville, Tenn, 1880, aged 58, a Fellow of the American Medical Association and a prominent practitioner of Todd County, died at his home, October 11, from cerebral hemorrhage

William R Gladman, Tonganoxie, Kan (license, Kansas, 1901), aged 68, a member of the Kansas Medical Society, a veteran of the Civil War and a practitioner for more than thirty years, died at his home, October 18, from malignant disease

James Albert Cowan, M D, New York, College of Physicians and Surgeons in the City of New York, 1904, aged 43, for ten years a member of the visiting staff of the Vanderbilt Clinic, died at his home, October 15, from cerebral hemorrhage

George Henry Picard, M D, New York, Cincinnati College of Medicine 1877 aged 66, for many years editor-in-chief of a newspaper syndicate in New York, died in Roosevelt Hospital, New York October 10, after a surgical operation

William Heister Dukeman, M D, Los Angeles, New York University New York, 1880 aged 61, a specialist in abdominal surgery, died from heart disease, October 22 while driving his automobile, between Pasadena and Los Angeles

Lewis A Burck, M D, Frederick, Md , Southern Homeopathic Medical College, Baltimore, 1895, a member of the Medical and Chirurgical Faculty of Maryland, died in the City Hospital, Frederick, October 16, from cerebral hemorrhage

William King Griffin, M D, Marion, S C , University of Pennsylvania, Philadelphia, 1854, aged 85, also a pharmacist, for four years surgeon in the Confederate service during the Civil War, died at the home of his daughter, September 28

Charles P Bigelow, M D, Grand Rapids, Mich , College of Physicians and Surgeons Baltimore, 1882, aged 92, a veteran of the Civil War, for many years a druggist, died in Blodgett Memorial Hospital, Grand Rapids, October 14

David Francis Lincoln, M D, Boston, Harvard Medical School, 1864, aged 75, acting assistant surgeon in the navy during the Civil War, at one time secretary of the American Social Science Association, died at his home, October 17

Henry H Whitaker, M D, Hilliardston, N C , University of Maryland, Baltimore, 1883, aged 55, formerly a member of the Medical Society of the State of North Carolina, died at his home, October 12, from cerebral hemorrhage

Sterling Barrows, M D, Worthington, Mass , College of Physicians and Surgeons in the City of New York, 1906 aged 36, a member of the Massachusetts Medical Society, died at his home, August 16, from tuberculosis

Frances J Bock, M D, Lancaster, Wis , Hahnemann Medical College Chicago 1906, aged 41, a member of the State Medical Society of Wisconsin, died, October 18, while on her way to New Mexico in search of health

Silas F Roberts, M D, Glencoe, Ohio, Kentucky School of Medicine, Louisville, 1895, aged 47, a member of the Ohio State Medical Association, was instantly killed by a train at a grade crossing in Glencoe, October 26

David L Howell, M D, Big Rock Tenn , Vanderbilt University Nashville, Tenn 1877, aged 59, for one term a representative from Stewart County in the general assembly, died at his home, near Legate, October 17

Joel Vinton Sampsell, M D, Elyria, Ohio, Jefferson Medical College 1877, aged 66, formerly a member of the Ohio State Medical Association, for forty years a practitioner of Elyria, died at his home, October 20

William Lawrence Evans, M D, St Marys, Ont , University of Toronto, 1915, lieutenant in the Canadian Army Medical Corps, was instantly killed while on duty at the western front in France in August

Edwin Henry Kertland, M D, C M, Toronto, Ont , Queen s University, Kingston, Ont , aged 91, one of the oldest practitioners of Ontario, died in the Toronto General Hospital, August 1, from senile myocarditis

Adam Wendell Hubschmitt, M D, New York, College of Physicians and Surgeons in the City of New York 1900, aged 37, died in the New York Hospital, September 20, from atrophic cirrhosis of the liver

Stanton Allen, M D, Hood River, Ore , College of Physicians and Surgeons in the City of New York, 1881, aged 57, for many years a practitioner of Milwaukee, Wis , died at his home, about October 17

Jacob N Dennis, M D, Hopkinsville Ky , Jefferson Medical College 1860, aged 82 surgeon in the Confederate service throughout the Civil War, died at his home, October 18, from cerebral hemorrhage

John Aaron Seapy, M D, Geddes, S D , Bennett Medical College Chicago, 1900, aged 42, a Fellow of the American Medical Association, died in St Mary s Hospital, Rochester, Minn , about October 12

James Bennett Gould, M D, Minneapolis, Jefferson Medical College 1886, aged 56, formerly a Fellow of the American Medical Association, died at his home, October 18, from cerebral hemorrhage

James D Wagner, M D, Selma, Calif , University of Nashville, Tenn , 1873, a member of the Medical Society of the State of California, aged 72, died at Long Beach, Calif, October 16

Clarius Confucius Birney, M D, Mason City, Iowa, Rush Medical College, 1874, aged 69, for many years a druggist of Mason City, died at his home October 21, from nephritis

Mathew John Mangan, M D, Rutland, Vt , University of Vermont, Burlington, 1905, formerly a member of the Vermont State Medical Society, died at his home, October 7

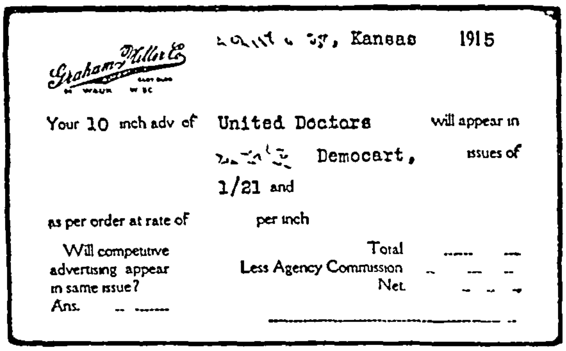
The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

THE ITINERANT "UNITED DOCTORS"

A Quack Organization Gets a Set-Back in Ohio

Many of our readers will remember that in 1913[1] The Journal published some articles dealing with a malodorous organization of quacks called the 'United Doctors" The moving spirit of this concern was one Ben W Kinsey The various articles have been republished in a pamphlet "Medical Institutes" and make an interesting, if sordid story



[redacted], Kansas 1915

Your 10 inch adv of United Doctors will appear in

[redacted] Democart, issues of

1/21 and

as per order at rate of per inch

Will competitive advertising appear in same issue?
Ans. -- -----

Total ---- --
Less Agency Commission - -- -
Net - - -

The newspaper publisher who accepted the advertisements of the United Doctors was required to sign a card similar to this and return it to Manchester

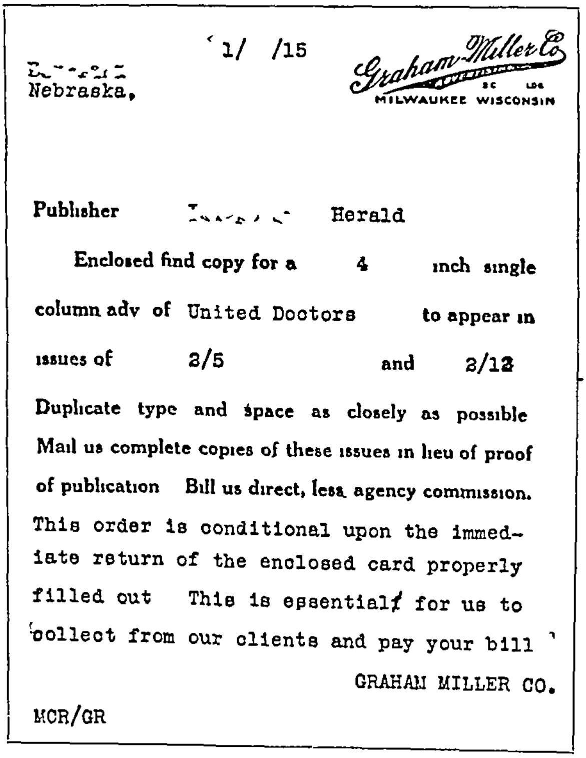
THE MANCHESTER ORGANIZATION

It now appears that there is still another organization that has been conducted under the name 'United Doctors" The concern previously dealt with, while not staying very long at any one place, usually opened offices and made a pretense of becoming a permanent resident of the towns in which it operated The later brand of "United Doctors" has been a one-day-stand affair, coming to country towns, after having liberally advertised their visit, and plying their trade in the rooms of the hotel at which they stayed

The general manager of this outfit is one Burton Edgar Manchester, who also seems to have operated an advertising agency under the name Graham-Miller Company[3] of Milwaukee, Wis, which "placed" the advertising for the "United Doctors" From our records, it appears that Manchester obtained a diploma from the Medical Department of the University of Buffalo in 1886 His disposition to wander seems pronounced It appears that in 1886 he was in Buffalo, in 1890 and 1893 in Royalton, N Y, in 1900 in Syracuse, N Y In 1902 he had migrated to Crandon, Wis Between 1904 and 1906 he seems to have been at Peshtigo, Wis, and Crystal Falls, Mich In 1908, Menominee, Mich, was his place of abode, while in 1911 he had moved on to Green Bay, Wis, drifting from there to Milwaukee Investigation has shown that Manchester's professional record at various places has been strictly in keeping with the class of business in which he is at present engaged In December, 1915 Manchester was arrested in Kalamazoo, Mich, in connection with his activities as head of the United Doctors concern The complaint against him was signed by Dr Beverley D Harrison secretary of the Michigan Board of Registration in Medicine The case against him was *nolle prossed* by the prosecuting attorney when Manchester agreed to keep out of Michigan in the future

THE OHIO CIRCUIT

During the past year Manchester has been "working" Ohio —and therein he showed poor judgment Manchester's method was to hire men who, presumably, had the legal right to practice medicine in the states in which the "United Doctors" wanted to advertise and do business The names of the physicians, of course, did not appear The advertisements which were put out by Manchester through his "advertising agency" (!) notified the gullible that the "specialists" of the 'United Doctors" would be in town on a certain date for one day only and could be seen from 9 a m to 8 p m at the hotel named in the advertisement



'1/ /15

[redacted]
Nebraska,

Graham-Miller Co
MILWAUKEE WISCONSIN

Publisher [redacted] Herald

Enclosed find copy for a 4 inch single column adv of United Doctors to appear in issues of 2/5 and 2/12

Duplicate type and space as closely as possible Mail us complete copies of these issues in lieu of proof of publication Bill us direct, less agency commission.

This order is conditional upon the immediate return of the enclosed card properly filled out This is essential for us to collect from our clients and pay your bill '

GRAHAM MILLER CO.

MCR/GR

Photographic reproduction (reduced) of typical contract made with country newspapers by Manchester *alias* United Doctors *alias* Graham Miller Co advertising agents!

Manchester s contract with his hirelings was sometimes that of fifty-fifty" on the net profits Manchester prepared the itinerary, paid for the advertising, furnished the "report blanks' and also the drugs prescribed by his case-taker The hireling doctors, on their part were supposed to send in daily reports to the Milwaukee office, giving the name, address

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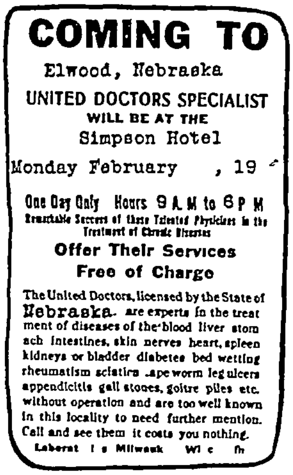
[1] The first article appeared in The Journal A M A March 1, 1913 the second article Aug 9 1913 News items also were published March 21 1914 and April 25 1914

[2] Medical Institutes is one of a series of pamphlets on the nostrum evil and quackery published by the American Medical Association price 10 cents

[3] Some time ago Mr A C Umbreit attorney for the Wisconsin State Board of Medical Examiners sent The Journal the following information regarding the Graham Miller Company and its connection with the United Doctors With reference to the Graham Miller Company supposed to be the advertising agents of the United Doctors this concern is unknown here Their name does not appear in the telephone directory nor in the city directory In looking up the address given upon the letter head of this concern I found such address to correspond to a small rear office in a small office building There was not even a sign on the door but the directory board of the building indicated the concern as occupying room No 2 the name being given as Graham Miller Company The room referred to was occupied by a typewriter and its operator some packages apparently containing medicines and other liquids and some papers and other nondescript matter I made inquiries among reputable advertising agents here about this concern and none of them have ever heard of it As to the supposed extensive laboratory of the United Doctors located at 531 E Water St I find that the place corresponding to this number is the ground floor of a small store building The sign indicates that the space is occupied by the Gould Pharmacal Company and it appears that one Paul Graw is proprietor of this concern Apparently it is a small drug jobbing house Nothing about the place indicated a laboratory of any size or description

Later Mr Umbreit wrote The Graham Miller Company still has its headquarters in the Cary Bldg a two story office building on a side street They apparently occupy four rooms and on the door of one of these rooms are written the words 'United Doctors entrance through the office of the Graham Miller Co This name does not appear in the city directory nor in the telephone book and ailment of, and the financial capacity of, and prospect of fees from, the victims After paying for the advertising and, presumably, the "advertising agency's" commission (Manchester being the "agency"), and paying also for the drugs (which Manchester furnished from an alleged laboratory in Milwaukee) and, in addition, paying the railroad and hotel expenses of the hireling, what was left from the daily intake was divided between Manchester and his employees, Manchester always getting at least half—frequently more

For the "Ohio Circuit" Manchester hired two men, G W W W Walker and Theodore Jacobsen Walker and Jacobsen, finding how easy the money came, apparently concluded that it was not worth while to split the profits with Manchester After familiarizing themselves with the United Doctors brand of quackery, they started out 'on their own" appropriating not only the trade name 'United Doctors," but the style of advertising and follow-up letters, etc, used by Manchester


COMING TO

Elwood, Nebraska

UNITED DOCTORS SPECIALIST

WILL BE AT THE

Simpson Hotel

Monday February , 19

One Day Only Hours 9 A M to 6 P M

Remarkable Success of these Talented Physicians in the Treatment of Chronic Diseases

Offer Their Services

Free of Charge

The United Doctors, licensed by the State of Nebraska are experts in the treatment of diseases of the blood liver stomach intestines, skin nerves heart, spleen kidneys or bladder diabetes bed wetting rheumatism sciatica tapeworm leg ulcers appendicitis gall stones, goitre piles etc. without operation and are too well known in this locality to need further mention. Call and see them it costs you nothing.

Laborat I s Milwauk Wi c n

Photographic reproduction (reduced) of typical advertising copy (of smaller advertisements) used by the United Doctors Notice that the name of the hotel date of visit town and state are filled in on a typewriter

WHEN QUACKS FALL OUT

This act of perfidy on the part of Jacobsen and Walker caused Burton E Manchester to come "humbly complaining' into court, 'praying" that Walker and Jacobsen shall be perpetually enjoined and restrained from stealing his "stuff' and appropriating his own private swag' But Jacobsen and Walker, apparently unwilling to give up easy money without a fight filed an answer to Manchester s complaint declaring that Manchester was coming into court with "unclean hands"

This was the status of affairs when the case came before Judge John M Killits of the District Court of the United States, Northern District of Ohio Before considering the question of issuing an injunction Judge Killits who seems to have a keen appreciation of the menace of quackery to the public health, directed the Ohio State Medical Board to determine whether or not Manchester was legally entitled to practice medicine in the state of Ohio To the consternation of plaintiff and defendant alike, the state medical board served subpoenas on Jacobsen and Walker to appear at its meeting on October 3 and show cause why the board should not revoke their licenses They were charged with violating the Ohio Medical Practice Act in that they were guilty (1) of splitting fees, were guilty (2) of 'grossly unprofessional and dishonest conduct" based on their newspaper advertising and were guilty (3) of being connected professionally with an illegal practitioner Manchester After the hearing the licenses of Drs G W W W Walker and Theodore Jacobsen were revoked

On October 16 Judge Killits handed down his opinion in the case This opinion is not only admirable in itself, but so succinctly describes the case before the court that we make no apology for giving it here in full

JUDGE KILLITS' OPINION

This is an action to restrain alleged unfair competition The bill of complaint was filed on Sept 5 1916 An examination of the bill and its exhibit suggests very clearly that the defendants (assuming that the allegations are true) were violating whatever rights the complainant had in the premises and if the complainant s business were legitimate and entitled to the protection of the court the case is one in which an injunction would clearly lie We also note that if complainant s business were illegitimate his methods and manner of conducting it were shown to be so accurately copied by defendants that they could not complain of any restraint imposed by the court on their action We therefore granted a temporary restraining order

The defendant filed a motion to the bill alleging that the complainant was seeking to protect an illegal business in the state of Ohio that the complainant was in court with 'unclean' hands The complainant thereupon filed a motion for leave to file an amended bill and the matter is now before the court on the motion of the defendants to dismiss the case on the amended bill for the same grounds urged against the original pleading The amended bill is permitted by the court to be filed on condition that the exhibits attached to the original bill are made part of the amended complaint

MAKING MILWAUKEE FAMOUS

Complainant alleges therein that he is licensed to practice medicine in the states of New York and Wisconsin that his citizenship is in the state of New York but because of his business and calling he is temporarily a resident of the state of Wisconsin that at Milwaukee he maintains laboratories for the manufacture and compounding and sale of drugs under the trade name of United Doctors He asserts that he has given special study and most of his attention to the subject of certain diseases and their treatment and the healing thereof that he has extended his business throughout many states by means of agreements with other physicians who were licensed and duly qualified by law to practice in the several states where their practice was carried on

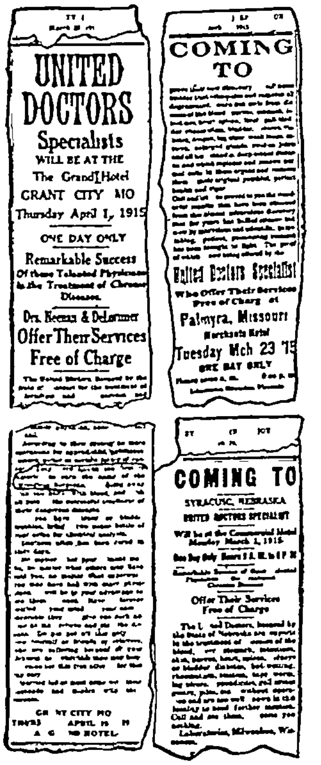
Briefly complainant carried on his business in the state of Ohio being the business which he seeks to protect by his appeal to this court by entering into contracts in writing with physicians qualified to practice medicine in the state of Ohio, by the terms of which contract these local physicians are to be advertised in the various newspapers and periodicals circulating within the state as United Doctors Specialists who will visit selected places from time to time and meet the afflicted It is their duty to consult with patients diagnose cases recommend medicines in consultation with the complainant and suggest the purchase of the necessary remedies from complainant's laboratories in Milwaukee Exhibits have been offered to the court showing special and confidential instructions to his physician agents by complainant in which they are *especially enjoined to report to him the financial capacity* and disposition of the persons allured by the advertisements of the United Doctors and *the prospect for fees* therefrom with recommendations as to amount of charges to be made in each instance [All italics are ours —ED]

A ONE HUNDRED THOUSAND DOLLAR BUSINESS

The defendants Jacobsen and Walker were at one time employed by the complainant to pose as specialists representing the United Doctors and to travel from advertised points to points within the state of Ohio Contracts shown between the complainant and his local representatives including defendants, disclose that the traveling specialists were to receive a percentage of the profits of the business created by them this percentage varying somewhat, as the exhibits show according to the terms which the complainant is able to make with the respective hirelings The complainant alleges that his business within the state of Ohio has exceeded in gross $100 000 in receipts in the last five years

THE NEWSPAPERS SHARE OF THE LOOT

The bill further says that the advertisements published by complainant and under his authority have been worked out with great care and are the products of long experience of your orator in his method of doing business that complainant is the sole proprietor of the entire business carried on under the trade name and style of United Doctors and that he has spent within the state of Ohio the sum of $25 000 in advertising in country newspapers the business which he carries on under that name and through his representatives


UNITED DOCTORS

Specialists

WILL BE AT THE

The Grand Hotel

GRANT CITY MO

Thursday April 1, 1915

ONE DAY ONLY

Remarkable Success

Of these Talented Physicians in the Treatment of Chronic Diseases

Drs. Keenan & Delormer

Offer Their Services

Free of Charge

COMING TO

United Doctors Specialist

Who Offer Their Services Free of Charge at

Palmyra, Missouri

Merchants Hotel

Tuesday Mch 23 '15

ONE DAY ONLY

COMING TO

SYRACUSE, NEBRASKA

UNITED DOCTORS SPECIALIST

Offer Their Services

Free of Charge

Greatly reduced reproductions of characteristic advertisements of the United Doctors Occasionally as will be noted above the names of the hireling physicians have been given This however is unusual

The defendants, Jacobsen and Walker after ceasing their contractual relationship with complainant in the early summer of the current year seeing doubtless no legitimate reason why they should divide with their Milwaukee employer the profits of this business concluded to work the people entirely to their own advantage and appropriating both the name and exactly the methods of their late principal established an office in the city of Cleveland styling themselves also United Doctors proceeding to advertise periodical trips to various country towns by copying in precise terms the advertisements which had heralded their approach when representing the complainant One of these advertisements will suffice to illustrate the general manner of the business attempted to be carried on It is that of defendants but with the exception of the hour and place and the last words 'Laboratories, Cleveland, Ohio,' it is copied, wording and punctuation, from the advertising matter of the complainant which he had worked out with great care and which he assures us are the products of long experience in his method of doing business' We quote from the Monroeville (Ohio) *Spectator* Aug 16, 1916, as follows

COMING BACK

United Doctors Specialist Will Again Be at Bellevue, Ohio, Friday, *August 25th, Hotel Bourdette*

ONE DAY ONLY

Hours 9 A M to 8 P M Remarkable Success of These Talented Physicians in the Treatment of Chronic Diseases Offer Services Free of Charge

The United Doctors Specialist licensed by the State of Ohio for the treatment of all diseases including deformities, nervous and chronic diseases of men women and children, offer to all who call on this trip, consultation examination advice free, making no charge whatever except the actual cost of treatment All that is asked *in return for these* valuable services is that every person treated will state the result obtained to their friends and thus prove to the sick and afflicted in every city and locality that at last treatments have been discovered that are reasonably sure and certain in their effect

The United Doctors are experts *in* the *treatment of chronic* diseases and so great and wonderful have been their results that in many cases it is hard to find the dividing line between skill and miracle

Diseases of the stomach, intestines liver blood, skin nerves heart, spleen rheumatism sciatica tape worm leg ulcer weak lungs, and those afflicted with long standing deep seated, chronic diseases that have baffled the skill of the family physicians should not fail to call Deafness often has been cured in sixty days

According to their system no more operations for appendicitis gall stones, tumors goiter piles etc as all cases accepted will be treated without operation or hypodermic injection as they were among the first in America to earn the name of Bloodless Surgeons by doing away with the knife with blood and with all pain in the successful treatment of these dangerous diseases

No matter what your ailment may be no matter what others may have told you no matter what experience you may have had with other physicians it will be to your advantage to see them at once Have it forever settled in your mind If your case is incurable they will give you such advice as may relieve and stay the disease Do not put off this duty you owe yourself or friends or relatives who are suffering because of your sickness as a visit at this time may help you

Worn out and run down men or women no matter what your ailment may be call it costs you nothing

Remember this free offer is for this visit only

Married ladies come with their husbands and minors with their parents

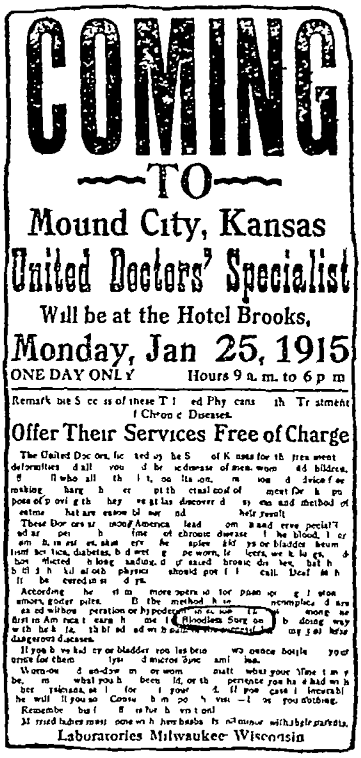
Laboratories Cleveland Ohio

'Our attention is called by the defendants to Section 1275 of the General Code of Ohio as amended in 1915—105 Ohio Laws 178 to support their contention that plaintiff s (as well as their own) business is illegal in this state This section provides that a license to practice medicine within the state of Ohio may be revoked by the state medical board for grossly unprofessional or dishonest conduct and by specific language of the statute these words are declared to mean among other things all advertising of medical practice in which extravagantly worded statements intended or having a tendency to deceive or defraud the public are made and also any division of fees or charges or any agreement or arrangement to share fees or charges made by any physician or surgeon with any other physician or surgeon or with any other person'

DOG EAT DOG

It is unnecessary to enlarge by argument on the propositions that *the advertisement quoted violates the spirit and letter of the section* to which we have referred and that *the financial arrangement* between the complainant and his representatives *is likewise obnoxious to the statute* These conclusions are too plain for extended discussion Undoubtedly complainant s representative in this state split' fees with him The advertisement which we quote is claimed by complainant as his very own he puts it forth to the public as the statement of the qualifications of himself and his specialists one prominent grievance against defendants which he seeks to have alleviated by court action in his case is that they employ his language to claim for themselves the same miraculous powers which he ascribes to himself and his representatives in this advertisement Yet he does not even pretend in his complaint that he has himself the comprehensive and profound professional qualifications which one would assume from this advertisement were enjoyed by the United Doctors He contents himself as we have quoted elsewhere from the complaint with affirming that he has made a special study and given much attention to certain chronic diseases, whatever they may be nor does he hint anywhere in his complaint that he employs representatives in this state who have anything more than the most ordinary medical qualifications Apparently he did not dare to aver that he engages in behalf of sufferers allured by such advertising the medical skill which remotely measures up to the encomiums of this advertisement *It* as well as its fellows, we feel justified in saying *is phrased in the language of a charlatan of one who would prey on credulity born of suffering and weakness* At least it must be the judgment of any intelligent and moderately informed person that complainant s advertising promises the impossible and is so extravagantly worded as to be considered deceptive, and when we consider it in connection with the method by which he conducts his business in Ohio and with the fact of his personal irresponsibility as a nonresident of the state for malpractice, it seems very clear to this *court that we must regard that business to be essentially fraudulent and against public policy*

It is urged in his behalf that his business was established before the law in question was enacted in Ohio, and it is also somewhat naively suggested that we have nothing to do with the character of his business inasmuch as it *may be legitimate elsewhere but should protect* his good will and trade name in Ohio as a property right This it seems to us is but begging the question The validity of the Ohio act of 1915 has not been questioned and we are not disposed to question it It is clearly in the interest of good faith and public welfare, and to enable one of the most deserving professions to be of the greatest possible service to people The state at any time, in the interest of the welfare of its people may legislate into illegality practices which theretofore were legal for want of legislative attention, and no rights in conflict with a reasonable exercise of the state s police power may ever be said to be vested



COMING
—TO—
Mound City, Kansas
United Doctors' Specialist
Will be at the Hotel Brooks,
Monday, Jan 25, 1915
ONE DAY ONLY Hours 9 a. m. to 6 p m

Offer Their Services Free of Charge

Laboratories Milwaukee Wisconsin

A typical United Doctors advertisement (greatly reduced)

INJUNCTION DENIED—COMPLAINANT PAYS COSTS

What the complainant is asking the court to do is to protect him in the transaction of a business in this state which is reprobated by its laws to permit him to make contracts with physicians in Ohio, the performance of which by them in this state would be to put them into opportunity as well as temptation to defraud and which *ought, by law to* result in the forfeiture of their right to practice medicine at all and to subject them to criminal *prosecution Of course no* court of equity would ever stand for such a practice

There is no other disposition of this case possible *than to dismiss the* bill at the cost of the complainant

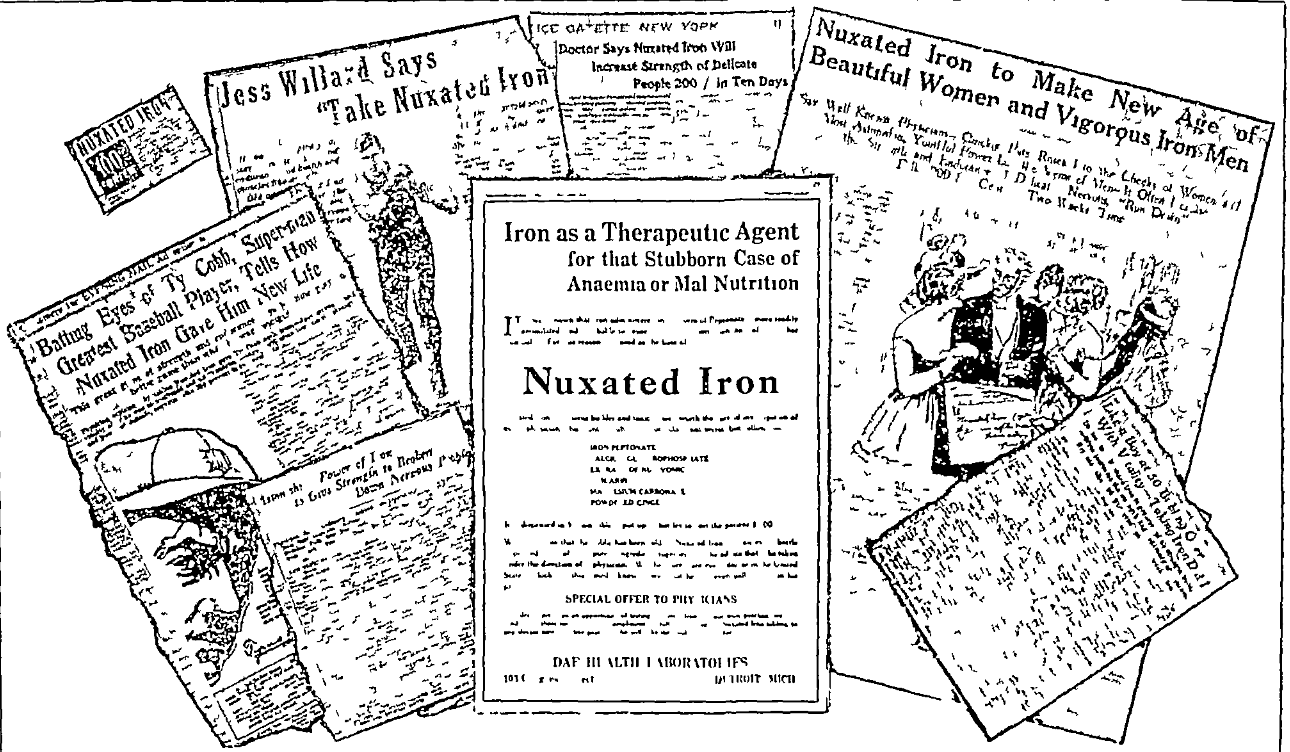
Summed up then, it seems that the United Doctors brand of quackery is no longer to be tolerated in the state of Ohio Manchester, the chief offender is stamped as an undesirable by the courts and is denied relief in his plea for an injunction against Walker and Jacobsen, and is made to pay the cost of his appeal The defendants in the case Jacobsen and Walker have had their licenses to practice medicine in Ohio revoked

In addition to the forthright action of Judge Killits, no little credit for this public service devolves on Dr George H Matson secretary of the Ohio State Medical Board and Mr G V Sheridan, executive secretary of the Ohio State Medical Association Both of these gentlemen attended the second hearing of the Manchester case in Toledo and carefully investigated the court records showing the various counter charges The case is discussed at some length in the October issue of the *Ohio State Medical Journal* which was published before the licenses of Jacobsen and Walker were revoked In closing, the *Ohio State Medical Journal* well says

The state medical board is determined to press this case to the limit There has been too much itinerant quackery in Ohio The amendment to the law adopted by the last legislature materially strengthens the power of the board in dealing with medical crooks With this increased power, those who are familiar with the situation believe that it will now be possible to inaugurate a state wide campaign on traveling quacks and permanently separate them from the source of their 'easy' money

'Hasten that day!"

preponderance is much greater in childhood than it is in adulthood" The German school statistics given by Rudolf Denhardt showing an average ratio of 3 1 may be used, for that is within Fletcher's range Statistics seem not to be available for the sex ratio in adulthood, but the most agreement is probably on 9 1, which is also within Fletcher's range



Jess Willard Says "Take Nuxated Iron"

Batting Eyes of Ty Cobb, Superman Greatest Baseball Player, Tells How Nuxated Iron Gave Him New Life

Power of Iron to Give Strength to Broken Down Nervous People

ICE GAZETTE NEW YORK

Doctor Says Nuxated Iron Will Increase Strength of Delicate People 200 / in Ten Days

Nuxated Iron to Make New Age of Beautiful Women and Vigorous Iron Men

Iron as a Therapeutic Agent for that Stubborn Case of Anaemia or Mal Nutrition

Nuxated Iron

SPECIAL OFFER TO PHYSICIANS

DAE HEALTH LABORATORIES

DETROIT MICH

The *Medical Record* of New York has been carrying full page advertisements of "Nuxated Iron" One of these advertisements is here reproduced in miniature with others of the same product from the *Police Gazette* newspapers etc Many of the better newspapers and all respectable lay magazines refuse advertisements of such nostrums The publishers of the *Medical Record* are not alone culpable They are not physicians they are business men furnishing the medical profession what it—presumably—wants or at least what it will tolerate The blame for the disgracefully low advertising standards of many medical journals rests with those physicians who subscribe for or contribute to such journals without protest

Correspondence

The Outgrowing of Stammering

To the Editor —If stammering—spasmodic, abortive speech—is outgrown there is a natural remedy, and it ought not to be difficult to bring that remedy under control

The divergence of opinion on the outgrowth of stammering is illustrated by the following quotations, which might be indefinitely continued

> Children do not of themselves grow out of the affliction '—Dr G Hudson Makuen
>
> I think one can safely say that there is no such thing as growing out' of stuttering'—John M Fletcher
>
> "Arndt notes that some children that stutter get well without special treatment"—Edward Conradi
>
> 'Occasionally light grades disappear spontaneously during late childhood and adolescent life Experience does not prove however that a majority of children who are affected outgrow the difficulty"—Dr Frank A Bryant
>
> There are approximately three times as many stammering children as stammering adults Late in childhood or during adolescence many stammerers lose the impediment"—C S Bluemel

Note that stammering is the subject under discussion in each quotation, although the words 'stutter' and "stuttering" are used The range of divergence is from no outgrowing to two-thirds outgrowing of the condition

Fletcher does not believe in outgrowth, however, he says

Estimates show that male stutterers preponderate over females in ratios ranging from 2 1 to 10 1 The male

The adopted figures, reduced to a comparable basis, show that where there are nine stammering schoolboys there are three stammering schoolgirls, and that where there are nine stammering men there is one stammering woman How can we account for the disappearance of the two stammering schoolgirls?

There are three possible solutions

1 Young men may have contracted stammering after school age But we must abandon this for it is generally admitted that the contraction subsequent to 12 years of age is negligible Dr Arthur Chervin says "As a rule stammering appears in early childhood, from 3 to 7 years, sometimes a little later, but very rarely after the age of 10 or 12 years"

2 The young girls may die off more rapidly than the young men This may be considered under two suppositions, namely, that among stammerers alone the girls die off much more rapidly, or that females in general die much more rapidly than males The first supposition is untenable, for stammering is not a fatal disorder, and whatever fatality it might cause would apply to each sex The second supposition—that females die more rapidly than males—is the reverse of the fact, for mortality tables show that the rate is higher among males

3 The remaining solution is that the two girl stammerers recovered from their stammering This must be accepted, for the other two solutions have been shown to be untenable

Let those who really want to do something worthy in connection with stammering find out the means by which two thirds of the girl stammerers recover, and apply that means to the other stammerers, and there will be no more stammering in adult life ERNEST TOMPKINS, M E, Los Angeles

A New Needle for Suturing Purposes

To the Editor —In The Journal, Oct 21, 1916, p 1228, Dr William C Speidel, Seattle, describes and illustrates "a new needle for suturing purposes" which has a central eye Such a needle has been in general use in this country and England for several years, and was described and illustrated by P P Cole in the *Lancet*, London, Sept 5, 1914, and is also described and illustrated in "Practical Medical Series," 1915, Volume II, p 34

Woodson H Taulbee, M D, Maysville, Ky

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed Every letter must contain the writer s name and address, but these will be omitted on request

WHAT IS PYORRHEA?

To the Editor —Kindly advise me whether a physician and surgeon, regularly licensed under the Illinois law and thereby empowered to practice medicine and surgery in all their branches, requires a license as a dentist before he may treat pyorrhea alveolaris

William A Lurie M D Chicago

Answer —The Illinois medical practice act defines the practice of medicine as treating or professing to treat, operating on or prescribing for any physical ailment or any physical injury to or deformity of another The Illinois dental law defines dentistry as treating or professing to treat any of the diseases or lesions of the human teeth or jaws or extracting teeth, or preparing or filling cavities in human teeth, or correcting the malposition of teeth, or supplying artificial teeth as substitutes for natural teeth Where is the dividing line between medicine and dentistry? In 1899 the Rhode Island supreme court (*State* v *Beck* 21 R I 288, 43 Atl 366) held that a legally qualified physician could practice dentistry The court said

> Dentistry is now a well recognized branch of surgery A dentist is a dental surgeon He performs surgical operations on the teeth and jaw and as incidental thereto upon the flesh connected therewith The sphere of operations then is included in the larger one of the physician and surgeon A fair and reasonable construction of the two statutes taken together therefore comes to this that the General Assembly intended to except physicians and surgeons from the restrictions imposed on other persons regarding the practice of dentistry It has always been the custom in this state and probably everywhere else for physicians to treat ailing teeth, to extract teeth and to perform various other professional services which technically come under the purview of dentistry To now prohibit them from thus treating their patients would be interference with their proper and legitimate functions

In 1909, the Minnesota supreme court held (*State* v *Taylor* 106 Minn 218 118 N W 1012) that a person licensed to practice medicine and surgery cannot by virtue thereof practice dentistry without securing a license as a dentist In this case the defendant extracted teeth, took impressions in wax of the mouth and cavities, secured artificial teeth from dental laboratories and delivered them to patients The court held that in the absence of any legislation to the contrary, a license to practice medicine and surgery would include dentistry, but that for reasons of public policy, the legislature had made a separate profession of dentistry The acts of the defendant came clearly within the definition of dentistry The legislature evidently intended to restrict the practice of the physician and surgeon and to require him, if he desires to practice dentistry, to obtain a license from the state board of dental examiners

The question still remains whether pyorrhea is a purely local disease, involving only the teeth and gums, or whether it is a local evidence of a general and constitutional condition Even if it is conceded that it is a purely local condition, is it a disease of the teeth or of the bone? If it is regarded as a disease of the bone, would the board of dental examiners take the position that all diseases of the jaw bone come exclusively within the realm of dentistry? If so, then the surgeon who treats a gunshot wound or a fracture of the jaw or who removes an osteosarcoma or the rhinologist who drains an infected superior maxillary sinus must first secure a license to practice dentistry If the dental law forbids the physician to use local treatment for pyorrhea, does not the medical law prohibit the dentist from using general treatment for the same condition? Must the patient with pyorrhea have a dentist on one side for local treatment and a physician on the other to administer general treatment? This reduces the question to an absurdity The right of the dentist under the Illinois statute to the extracting of teeth, the filling of cavities, the correction of malpositions and the supplying of artificial teeth will probably not be questioned The controversy will center around that part of the statutory definition of dentistry which includes "treating any of the diseases or lesions of human teeth or jaws' If this is interpreted literally by the courts, it can only lead to confusion

MENTAL DISTURBANCES DUE TO WAR

To the Editor Please give a list of publications dealing with special or new forms of mental diseases arising from conditions at the front or indirectly caused by economic war conditions in the different countries affected

S N A

Answer —The following is a list of references on this subject

Claude Dide and Lejonne War Psychoses *Paris med*, Sept 2 1916

Psychic Disturbances Incident to the War Berlin Letter The Journal April 29 1916 p 1398

Chavigny P Psychiatry in the Active Army *Paris med* Jan 1 1916 abstr The Journal Feb 12 1916 p 538

Soukhanoff S A War Psychoses *Russk Vrach* 1915 xiv No 34

Weygandt W Psychiatry in War, *Munchen med Wchnschr* Sept 14 1915 Mental Disease in War ibid Oct. 27 1914

Wittermann E Psychiatry on the Firing Line *Munchen med Wchnschr* Aug 24 1915

Emslie I War and Psychiatry *Edinburgh Med Jour* May 1915

Oppenheim H War Neurology, *Berl klin Wchnschr* Nov 30 1914 abstr The Journal Jan 16 1915 p 280

Bonhoeffer K Psychiatry and War *Deutsch med Wchnschr* Sept 24 1914 abstr The Journal Nov 7 1914 p 1703

CHYLURIA AND FILARIASIS

To the Editor —Please give me information as to whether the lymphatic disease with chylous urine attacks of pain in the muscles and fever due to filaria which have been found in the blood taken at night in the case of a Cuban is curable also give the method of procedure with drugs to be used I have heard that thymol is good for this purpose others say that there is no drug of service—that change of climate is the *only* thing

Floyd Bonesteel Ennist M D New York

Answer —The treatment of chyluria according to Manson and others, is to send the patient to bed elevate the pelvis, restrict the amount of food and fluid—especially fatty food—gentle purgation, and absolute rest A day or two of this kind of treatment will probably be followed by temporary or prolonged cessation of the chyluria Drug treatment of filariasis is uniformly disappointing The drugs which have been recommended for the treatment of this disease are gallic acid in large doses, benzoic acid in large doses, glycerin, the tincture of ferric chlorid, decoction of mangrove bark chromic acid, quinin, sodium salicylate, ichthyol, and *Nigella sativa* It is not probable that these substances have any influence in stopping the lymphorrhagia, nor is it likely that thymol or methylene blue have any effect either on the filaria or on the disease it causes Both drugs have been tried, but the results have not been satisfactory It should not be forgotten that a filarious patient for the protection of others, should sleep under a net, the varieties of mosquitoes capable of acting as intermediate hosts being numerous

IODIN AS A DOUCHE FOR TEETH

To the Editor —I have found marked benefit from the application of tincture of iodin 5 per cent solution to the gums around the roots of the teeth Do you know of any good substitute, as the iodin discolors the teeth? Please do not publish my name

W F

Answer —Black, in his work on "Dental Pathology," recommends that the patient be taught to douche the gums twice daily with physiologic sodium chlorid solution A rubber bulb syringe with a tolerably large nozzle is advised This is to be held in such position that the stream will pass into and wash out the space between the edge of the gums and the teeth In this way inflammation, which would otherwise result from accumulation of bacteria and their products, may be prevented Black also states that more than half of all inflammations of the gums are due to slight traumatisms of various kinds such as the lodgment of food between teeth, rough edges of fillings, crowns etc Such conditions should have the attention of a competent dentist

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arkansas Regular Little Rock, Nov 14 Sec Dr T J Stout, Brinkley Homeopathic, Little Rock Nov 13 Sec, Dr Scott C Runnels 900 Scott St, Little Rock Eclectic Little Rock Nov 14 Sec Dr C E Laws 712 Garrison Ave, Fort Smith

Connecticut Regular New Haven, Nov 14 15 Sec, Charles A Tuttle 196 York St New Haven Homeopathic New Haven, Nov 14 15 Sec, Dr E C M Hall 82 Grand Ave New Haven Eclectic New Haven, Nov 14 Sec, Dr T S Hodge 19 Main St Torrington

Delaware Dover and Wilmington Dec 12 14 Sec, Dr H W Briggs 1026 Jackson St, Wilmington

Florida Regular, Palatka, Dec 5 6 Sec, Dr E W Warren, Palatka

Kentucky Louisville Dec 11 13 Sec Dr A T McCormack, Bowling Green

Louisiana New Orleans Nov 30 Dec 2 Sec Dr E L Leckert 716 Macheca Bldg New Orleans

Maine Portland Nov 14 15 Sec Dr Frank W Searle 776 Congress St Portland

Maryland Regular Baltimore Dec 12 Sec Dr J McP Scott 137 W Washington St Hagerstown

Massachusetts Boston Nov 14 16 Sec Dr Walter P Bowers Room 501 No 1 Beacon St Boston

Missouri St Louis Dec 11 13 Sec Dr J A B Adcock Jefferson City

New Hampshire Concord Dec 18 19 Sec, Dr W T Crosby, Beacon Bldg Manchester

Ohio Columbus Dec 5 7 Sec, Dr Geo H Matson State House, Columbus

Rhode Island Providence Nov 15 16 Sec Dr Gardner S Swarts, 70 Waterman St Providence

South Carolina Columbia Nov 14 Sec, Dr A Earle Boozer 1806 Hampton St Columbia

Texas Fort Worth Nov 14 16 Sec Dr J S McCelvey Temple State Bank Bldg Temple

Virginia Richmond Dec 15 18 Sec, Dr J N Barney, Fredericksburg

West Virginia Parkersburg Nov 14 Sec Dr S L Jepson State Health Commissioner Charleston

Wyoming June Report

Dr H E McCullum, secretary of the Wyoming State Board of Medical Examiners, reports the written examination held at Laramie, June 14-16, 1916 The total number of subjects examined in was 10, total number of questions asked, 100, percentage required to pass, 75 The total number of candidates examined was 8, including 1 osteopath, all of whom passed Five candidates were licensed through reciprocity The following colleges were represented

College	PASSED	Year Grad	Per Cent
University of Arkansas		(1909)	84
Denver and Gross College of Medicine		(1905)	77 7
University of Colorado		(1916)	82 9
University of Louisville	(1912) 85 8	(1916)	79 9
John A Creighton Medical College		(1915)	83 8
Trinity Medical College		(1904)	91 3

College	LICENSED THROUGH RECIPROCITY	Grad	Reciprocity with
University of Colorado		(1912)	Utah
Hahnemann Medical College and Hospital Chicago		(1906)	Illinois
Rush Medical College		(1910)	Utah
John A Creighton Medical College		(1901)	Iowa
Dallas Medical College		1903)	Illinois

Indiana July Report

Dr W T Gott secretary of the Indiana State Board of Medical Registration and Examination reports the written examination held at Indianapolis, July 11-13, 1916 The total number of subjects examined in was 16, total number of questions asked, 100, percentage required to pass, 75 The total number of candidates examined was 45, of whom 42 passed, including 2 osteopaths, and 3 failed Thirteen candidates were licensed through reciprocity The following colleges were represented

College	PASSED	Year Grad	Per Cent
Chicago College of Med and Surg	(1914) 94 1	(1916) 89 8	92 2
Rush Medical College		(1916)	89 9
Indiana University (1916) 87 4 88 2 88 5 88 8 89 1 89 5 89 6 89 6 89 7 89 8 90 90 90 6 90 6 90 6 90 6 91 91 91 91 1 91 4 91 6 91 9 92 6 92 6 92 6 93 1 94 4 94 7 94 9			
Harvard University		(1913)	94 7
St Louis University	(1912) 89 7	(1916)	92 8
University of Vermont		(1915)	87 1
Marquette University		(1916)	93 5
University of Toronto		(1911)	93 1
	FAILED		
Indiana University		(1916)	* *
Vanderbilt University		(1915)	*

College	LICENSED THROUGH RECIPROCITY	Year Grad	Reciprocity with
Bennett Medical College		(1913)	Illinois
Hahnemann Med Coll and Hosp Chicago		(1914)	Illinois
Northwestern University		(1909)	Illinois
University of Illinois	(1913)	(1914)	Illinois
Medical College of Indiana		(1885)	Nebraska
Kentucky School of Medicine		(1898)	Kentucky
University of Louisville	(1910)	(1912)	Kentucky
University of Michigan Medical School		(1882)	Michigan
Jefferson Medical College		(1910)	Penna
University of the South		(1899)	New York
Vanderbilt University		(1913)	Tennessee

* No grade given

Book Notices

A Text Book of Fractures and Dislocations With Special Reference to Their Pathology, Diagnosis and Treatment By Kellogg Speed S B, M D F A C S Associate in Surgery Northwestern University Medical School Cloth Price $6 net Pp 888, with 656 illustrations Philadelphia Lea & Febiger 1916

The clinical and statistical material in this book is taken largely from the voluminous service of Cook County Hospital, Chicago In the earlier chapters, the regeneration of bone, and repair, etiology and mechanism, pathology, complications and sequelae of fractures are fully discussed The immediate, nonoperative and operative treatment are described, and special consideration is given to the internal bone splinting both in recent and in old ununited fractures The general considerations of dislocations are much more briefly considered Skull and face fractures are well illustrated by tracings of roentgenograms and photographs and sketches particularly of the methods of fixation of the jaw fragments The chapters on fractures of the lower end of the humerus and dislocations of the elbow are among the best The newer studies on fractures and dislocations of the carpal bones are well reviewed and illustrated The chapter on the operative treatment of fractures of the femur is particularly full The varieties of fractures about the ankle joint and of the os calcis are minutely considered On the whole, the illustrations of fractures of the lower extremities are much better and more numerous than are those of the dislocations Numerous photographs of special therapeutic appliances and of pathologic specimens are included among the illustrations

Obstetrics Normal and Operative By George Peaslee Shears B S M D Professor of Obstetrics, New York Polyclinic Medical School Cloth Price, $6 Pp 745 with 419 illustrations Philadelphia J B Lippincott Company 1916

In presenting a new volume on obstetrics, a field already crowded, the author has endeavored to omit the irrelevant matter and confine emphasis to the practice of obstetrics For this reason the book is admirably adapted to the practitioner of medicine, the man who does not have at his disposal the facilities of a hospital Whether such a work is well suited to the student is a question fairly debatable The author has felt that too many "texts" are constructed on a plan which does not conserve the interests of either the practitioner or the student Therefore the theory of pure obstetrics has been emphasized and amplified, while the traditional sections on embryology, placentation and anatomy have been omitted As evidence of the practical nature of the volume the author goes into considerable detail in his chapter on the management of labor He prefers the "superior safety of ether," while stating that women in labor enjoy a remarkable degree of immunity from the toxic effects of chloroform He has not found "twilight sleep' injurious to the mother, and describes a modification of the Freiburg method Two small doses of scopolamin and morphin are employed, with ether during the second stage The use of nitrous oxid analgesia in labor is not mentioned In many respects the author s methods cannot be too highly commended Thus the technic described for the induction of labor by the use of rubber bags or that of vaginal cesarean section, is admirable clear, concise, and reveals expert workmanship In forceps extraction the Tarnier axis traction instrument is employed, the traction apparatus being removed as soon as the fetal head has been brought down to the perineum, actual delivery being accomplished with the application handles The illustrations are abundant and to the point

Medicolegal

Marriage Not Annulled for Epilepsy

(Elser v. Elser (N. Y.), 160 N. Y. Supp. 724)

The Supreme Court of New York, Special Term, Bronx County, per Justice Mullan, says: The husband sues to annul the marriage on the grounds (1) that the defendant was physically incapable, etc., and (2) that he was induced to enter into the marriage contract by her fraud in concealing from him that she was an epileptic, and in leading him to believe, through statements to that effect, that she was in good health. It was proved, even conceded, that the defendant was, at the time of the marriage, and has been ever since, afflicted with the disease known as epilepsy. As to the first ground urged it was shown that the exercise of the matrimonial function induced on the part of the wife paroxysms or convulsions symptomatic of her disease, and that this made copulation abhorrent to her and unsatisfactory to him and thus lessened its frequency, but as copulation was possible, no more need be said on that subject. As to the charge of fraud, the court finds there was none. The court had a physician called to examine the wife, and he testified that the statistics show that in about 16 per cent of the epileptic cases covered by the records from which the statistics were compiled the taint was inherited. The plaintiff's counsel urges that public policy requires an annulment decree in order to prevent the coming into the world of progeny tainted by an epileptic strain; but we have not as yet come to that refinement of civilization. Complaint dismissed, without costs.

Medical Practice Act and Diagnosis

(People v. Jordan (Calif.), 156 Pac. R. 451)

The Supreme Court of California, in affirming a conviction of the defendant of having engaged in the practice of a system or mode of treating the sick and afflicted without having a certificate authorizing him so to do, holds that the objection was without merit that the title of the act under which the defendant was prosecuted (statutes of 1913, page 722) is not sufficient in its expression of the purposes declared in the body of the act itself. Nor does the court agree with the contention that the act violates certain constitutional provisions in that it is discriminatory in exempting from its provisions a certain class of drugless practitioners, namely, those who resort to prayer as a means of treating persons afflicted with bodily ills. The court says that it was argued that the act is discriminatory because the prohibitory words thereof make it unlawful for any one of those who fall within its description to 'diagnose' disease. It was said that to 'diagnose" disease does not necessarily involve an intention on the part of the diagnostician either to treat the afflicted person or to prescribe for him in any way, and that to require no diagnosis from those who profess to treat disease by prayer while prohibiting all other unlicensed persons from diagnosing various ailments is an unjust and unconstitutional regulation, favoring one class of citizens unduly. This whole argument rests on a misconception of the meaning of the term "diagnose." As used in pathology the word means 'to determine the diagnosis of; to ascertain, as a disease from its symptoms" (Century Dictionary); it means "the recognition of a disease from its symptoms.' Diagnosis is as much a part of the practice of medicine as is the administration of remedies, and it is a vastly more important branch thereof because, generally speaking, the treatment of disease is governed by the practitioner's theory regarding its cause. Intelligent treatment may follow only correct diagnosis. It was argued that diagnosis is merely 'guessing,' but that is only partially true. It is a matter of common knowledge that in the present development of microscopy, chemistry, bacteriology, radiography and kindred sciences there are some diseases which may be detected with absolute certainty by the accomplished diagnostician. But even where it depends partly on conjecture real diagnosis is the product of knowledge and experience. The Supreme Court of the United States has declared diagnosis to be a part of the practice of the healing art, even in systems of treatment which do not deal with administration of remedies, but with mechanical adjustment of parts of the human body (*Collins vs. Texas,* 223 U. S. 288). It is impossible to dissociate diagnosis from the practice of the art of healing by any physical, medical, mechanical, hygienic or surgical means. It is competent, therefore, for the legislature to permit only those persons who are proficient and who have been found to be educated up to certain standards to "diagnose" ailments. The objection that those who profess to treat bodily afflictions by prayer are not required to be proficient in diagnosis, and that their exemption, under the law, is the extension of a favor to them which is withheld from others is met by the obvious answer that diagnosis is no part of such treatment. Those who believe that divine power may be invoked by prayer for the healing of the body believe also that God is all-powerful. Patients receiving their ministrations know this, and therefore no fraud or injury may be practiced on such persons by reason of any lack of skill by the healers in determining the nature of the diseases to be treated. But those who elect to depend on some other system of treatment have a right to protection by the state from the ministrations of unskilful, uneducated persons. In other words the right to practice medicine should carry with it some assurance to the public that the licensed practitioner possesses reasonable proficiency in the technic of his profession.

Society Proceedings

COMING MEETINGS

American Academy of Ophthal. and Oto-Laryn., Memphis, Dec. 11-13.
American Association of Anatomists, New York, Dec. 27-29.
Medical Association of the Isthmian Canal Zone, Ancon, Dec. 16.
Society of American Bacteriologists, New Haven, Conn., Dec. 26.
Southern Medical Association, Atlanta, Nov. 13-16.
South. Surg. and Gynec. Assn., White Sulphur Spgs., W. Va., Dec. 11-13.
Western Surgical Association, St. Paul, Dec. 15-16.

AMERICAN ROENTGEN-RAY SOCIETY

Seventeenth Annual Meeting, held at Chicago, Sept. 27-30, 1916

(Continued from page 1393)

Roentgen Appearances of Osteomyelitis

Dr. Roland Hammond, Providence, R. I.: A localized, definitely circumscribed area of increased radiability occurring in the juxta-epiphyseal portion of the bone in children is commonly known as Brodie's abscess. It is oval in shape, has a clear-cut bony wall and is most often seen at the upper end of the ulna or the tibia. The Roentgen appearance would suggest a cyst, but the pain, localized tenderness, limitation of joint motion and elevation of temperature are more marked than usually obtains in a case of simple bone cyst. While the Roentgen appearance of pyogenic osteomyelitis is fairly typical in the ordinary case, it is likely at times to be confused with certain stages of tuberculosis and syphilis. It may be necessary to settle the question by laboratory tests or the histologic examination of the bone in question in order definitely to settle the diagnosis.

Roentgen Diagnosis of Metastatic Malignant Bone Disease

Dr. George E. Pfahler, Philadelphia: Metastatic carcinoma involving bone is much more frequent than is generally recognized, and probably in the advanced cases occurs in nearly 20 per cent. The metastasis to the spinal column takes place most frequently from mammary carcinoma in women, or prostatic carcinoma in man, and next to these probably the carcinomas of the stomach and the thyroid lead to spinal metastases. Rheumatic pains occurring in the growth of malignant disease should always make us think of metastatic carcinoma in the spinal column, and demand a thorough Roentgen study. The recognition of metastatic carcinoma of the spinal column or other bones makes a very bad prognosis but not absolutely hopeless, and there may still be a considerable prolongation of life with hope and comfort even after the disease has become very extensive A healing process has been shown by me in metastatic carcinoma of bone

Renal and Ureteral Stone Symptoms in Spondylitis Deformans

Dr E Blaine, Chicago The frequent Roentgen-ray finding, after careful and proper examination, of "no shadows indicating renal or ureteral stone" leads to a search for the cause of the patient's symptoms The symptoms are usually more or less characteristic of stone, particularly the sharp pain which occurs intermittently A series of fifty-nine cases were reviewed and the study of the findings reveals a high percentage of bone changes involving the lower spine at or near the kidney regions These changes range from a mild hypertrophic spondylitis to a high grade bone increase, resulting in 'bridging' and local erosions of the articular surfaces of the vertebral bodies These findings, in the absence of stone shadows, suggest very strongly the cause of the symptoms which lead one to suspect lithiasis, but which evidently are due to spondylitis

DISCUSSION ON ROENTGENOGRAPHY IN DISEASES OF THE BONE

Dr John L Porter, Chicago *Patients with tuberculosis* of the spine have been operated on for stone in the bladder and for appendicitis the pain having been referred Facts are brought out in the roentgenogram which cannot be explained without clinical findings and the history I think the roentgenologist should know something about the case, its clinical history and the findings, so that he can make a better interpretation of the roentgenogram

Dr H E Potter, Chicago If the clinical symptoms are positive for osteomyelitis, no time should be lost in urging operation A surgeon should not be kept waiting for positive Roentgen findings in acute osteomyelitis When the disease is advanced and a definite pathologic condition shows in the bone, it will appear in the roentgenogram

Dr. H K Pancoast, Philadelphia Acute osteomyelitis or acute epiphysitis cannot be diagnosed by means of the Roentgen ray, that is, in the early stages of the disease It has been my custom to impress on my students the fact that the patient should be operated on before the Roentgen diagnosis is possible

Dr A B Moore, Rochester, Minn Many metastatic cancer patients have no symptoms except perhaps some pain Nothing in medicine is so deceptive as a so called kidney history and often the urinalysis may be negative and the Roentgen examination negative, even though there may be pathologic changes in the kidney Pyelography and pyeloscopy are also of great help in making a diagnosis

Dr L G Cole, New York I recall making negative plates of bones in which osteomyelitis was suspected to be present, but with added experience I learned to interpret that finding correctly

Dr E Blaine, Chicago In cases of acute osteomyelitis I always state that the Roentgen ray does not show any change in the bone during the first few days of the disease, and therefore the Roentgen findings should not be considered one way or the other Operative intervention should not be delayed It is astonishing how many cases of metastatic carcinoma of bones show no symptoms whatever

Pathologic Reasons for Legitimate Errors in the Roentgen Diagnosis of Gastric Carcinoma and Ulcer

Dr W C MacCarty, Rochester, Minn The pathologic reasons for the legitimate errors in Roentgen diagnosis of gastric ulcer and gastric carcinoma seem to be the following There is no macroscopic differentiating structural difference *between a single chronic gastric ulcer and an early carcinomatous* chronic gastric ulcer There is no differentiating variation in muscular structure which might be the basis of diagnostic difference in gastric rhythm in simple chronic gastric ulcer and an early carcinomatous chronic gastric ulcer The diagnosis of early carcinoma in the border of a chronic gastric ulcer is a question of the position of a few undifferentiated epithelial cells in the mucosa or submucosa, and it still remains an open question whether or not Roentgen rays can differentiate such small quantities of such cells from normally differentiated epithelial cells or the cells of the other tissues *in a chronic ulcer*

Diagnosis of Syphilis of the Stomach

Dr L T LeWald, New York It *is a rare manifestation* of syphilis, congenital or acquired, occurring mostly in males, especially in the fourth and fifth decades, but also at almost any age Its pathology is characterized by (1) multiplicity of lesions in many organs, and (2) by variety and plurality of lesions in the stomach itself Its symptomatology corresponds to the pathologic findings, it presents no unanimity of symptoms There are four symptoms which are, however, fairly common, singly or combined These are pain, especially immediately after eating emaciation tenderness and hemorrhage If there is a clear history of syphilis, or if the Wassermann test is positive, the diagnosis should be comparatively simple

Indications for Surgical Intervention in Gastro-Intestinal Cases

Dr L G Cole, New York Approximately one half of the cases of gastric cancer that I have examined have been inoperable, and the Roentgen evidence before operation indicated beyond a doubt that the case was inoperable In only about 75 per cent of the operable cases which are proved to be malignant at the time of operation can anything more than a palliative gastro-enterostomy be performed, and in many of these cases the desired palliation is not obtained Nevertheless, this operation is justifiable even if the desired relief should not follow This leaves 25 per cent of the operable cases (only 12 per cent of the total number of gastric cancers) in which there is any hope for surgical cure by resection of part of the stomach or by pylorectomy In 70 per cent of these cases in which an attempt was made to remove the growth, the patient died before leaving the hospital Postpyloric ulcers with deep, penetrating, bullet-like craters with thick edges require surgical procedure When the induration has transgressed the pyloric sphincter and causes secondary involvement of the pars pylorica, surgical procedure may be indicated to prevent malignancy In such cases a pylorectomy, not a gastro-enterostomy, is indicated

Roentgen Studies of the Pelvic Colon and Rectum

Dr J T Case, Battle Creek, Mich That portion of the colon which has a long mesocolon should be freely movable Adhesions of the pelvic colon which interfere with its free mobility are vicious, and when associated with other clinical symptoms may require surgery The mere presence of adhesions is not a surgical indication Adhesions must disturb the function In most cases of pelvic colon obstruction, the symptoms are chiefly referred to the neighborhood of the cecum and ascending colon through increase of the normal antiperistaltic influence Rectal constipation is a common finding It may be due to adhesions near the pelvirectal junction, to any acute inflammatory rectal condition, such as prostatitis, hemorrhoids, rectal ulcer, or in other cases to atony of the rectal walls Proctoscopic examination is needed to differentiate In syphilis of the rectum the filling defect is smooth-edged and extensive, converting the shadow of the rectal ampulla into a long, narrow, *smooth-edged tube*, as contrasted with carcinoma, which produces an irregular filling defect, not involving the rectum so extensively in a longitudinal direction

DISCUSSION ON ROENTGENOGRAPHY IN DISEASES OF THE STOMACH

Dr E H Skinner, Kansas City, Mo If I had a carcinoma of the stomach I would be operated on irrespective of the Roentgen findings I should want some one to see that tumor and then pass judgment

Dr George C Johnston, Pittsburgh When the roentgenogram apparently shows a carcinoma of the stomach, look at the patient If it is a case of syphilis, you will find that he does not look sick. If it is carcinoma, he will surely show some evidence of cachexia. Make a Wassermann test, and if it is syphilis the test will be positive. That is the way I make the diagnosis. In every case of malignant disease of the stomach in which I have reason to believe that there still remains sufficient gastric wall for the surgeon to do a gastro-enterostomy, I insist on having the operation done.

(To be continued)

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Sixty-Sixth Annual Meeting, held at Scranton, Sept. 18-21, 1916

(Continued from page 1396)

Treatment of Compound Fractures

Dr. Jonathan M. Wainwright, Scranton: The main problems presented by compound fractures are to prevent or cure infection and to procure and maintain satisfactory reduction. Researches in the armies in Europe have shown that Dakin's hypochlorous acid solution is most effective in the treatment of infected fractures and that the retentive fracture dressings must be such as to permit access to the wound for the purpose of dressing. As regards drainage we must accept the teaching of Moynihan, that "there never yet was such a thing as a gauze drain." I believe that the fixation methods will narrow down to three: open operation and suture of the fragments by kangaroo tendon, the Albee sliding graft, or extension by the Steinman pin.

DISCUSSION

Dr. John B. Lowman, Johnstown: The success of the treatment of compound fracture lies in the primary dressing. Too much is done in the way of first aid. Convert the compound into a simple fracture before attempting any method of operation. Wipe off all the foreign material you can, paint with iodin and put on the dressing. Our percentage of infections has become very low. A plate should not be put on a compound fracture.

Dr. William L. Estes, South Bethlehem: The indication in the compound fracture is first, to provide for as nearly absolute drainage as possible. If the fluids which develop are dammed up they will press on the blood vessels and a thrombus develops and if it continues a necrosis. The indication is to relieve that pressure as soon as possible and to prevent it. Remember that gauze is not a drain. I am not quite in accord with the dictum that metallic plates should not be used. I use them with the greatest satisfaction. I do not believe that absolute immobilization is necessary for union in fracture. I have seen delayed union caused from immobilization.

Dr. Edward Martin, Philadelphia: As a rule, a fracture unites in inverse proportion to the traumatism which has been inflicted. The greater the traumatism and the larger the exudate the slower the union. There seems to be almost no constitutional condition which will either delay or interfere with union. We have had best results in cases of delayed union by the Bier condenser and by the simple common sense expedient of changing the treatment. Except in the operative cases we are not greatly troubled with nonunion or greatly delayed union. In every case of fracture in which operation is performed whether by kangaroo tendon, bone plates, pins, pegs, staples, screws or what not, unless there is some delay in union and the delay is proportionate to the traumatism inflicted on the end of the bone we are to some extent led from the ideal of apposition.

Dr. G. F. Bell, Williamsport: In the large majority of cases infection is due to the fact that the surgeon goes into the operative field before proper aseptic preparations have been made.

Abnormal Coagulation Time of the Blood, and Methods of Overcoming It

Dr. G. M. Dorrance, Philadelphia: Normal blood coagulates within fairly well defined limits. The factors concerned in normal coagulation of the blood are kinase, calcium, prothrombin, thrombin, fibrinogen, and fibrin. Kinase plus calcium plus prothrombin equals thrombin. Thrombin plus fibrinogen equals fibrin. Kinase and calcium are found in the cellular elements of the blood and all the tissues. Prothrombin is derived from placques and white blood cells, but its origin is unknown. Fibrinogen is derived chiefly from the liver. Any disturbance of these elements causes a change in the clotting time. Medication has little or no influence in changing the clotting time of normal blood. In all cases in which the coagulation time is lengthened we must find the cause and attempt to correct the deficient element, for instance, if it is due to a lessened amount of calcium, we supply it, if due to any of the other elements, it is best remedied by the use of serum or transfusion. We should determine the coagulation time in all suspicious cases before doing any operative procedures.

DISCUSSION

Dr. Ernest Laplace, Philadelphia: In certain cases as long as eight or ten minutes are required for coagulation, and my rule has been to try to bring it down to three or four minutes before I thought it was quite safe to operate.

Dr. G. M. Dorrance, Philadelphia: Coagulation time in six minutes is perfectly satisfactory to us in certain instances. You have to qualify with what instruments you are using.

Tuberculous Abscesses

Dr. Charles W. Delaney, Altoona: Tuberculous abscesses should not be opened and drained. A mixed infection is immediately implanted, which sooner or later destroys life or causes a state of invalidism. Tuberculosis as a single infection never kills, it is the mixed infection, which produces pathologic changes in the internal viscera. Tuberculous abscesses should be aspirated and injected with a modifying solution under the most rigid aseptic operative technic. The technic of Calot in our hands has proved by far the most satisfactory of all methods. The formula of Calot's solution is: olive oil, 70 gm., ether, 30 gm., creosote, 5 gm., guaiacol, 1 gm., and iodoform, 10 gm. Seven aspirations are made at ten day intervals, and at the last sitting a simple aspiration is done and a compress applied. The walls collapse and agglutinate.

Types of Pneumococci in Infants and Children

Dr. A. Graeme Mitchell, Philadelphia: Ninety children were studied, 11.1 per cent showed Type I, 11.1 per cent Type II, 3.3 per cent Type III and 74.4 per cent Type IV. The mortality of infants and children infected with the fixed types (I, II, III) seems to be lower than in adults, with Type IV it is slightly higher (10.9 per cent.) than in adults. The fixed type occurs at all ages, the Type IV pneumococcus often causes as severe an infection as the fixed types. Type I seems to cause a mild infection. Type IV is the most frequent infecting organism in bronchopneumonia. Complications are more frequent with the Type IV infection. All the severe complications (empyema and meningitis) were in those infected with the Type IV pneumococcus.

Specific Treatment of Acute Lobar Pneumonia

Dr. Rufus Cole, New York: Clinical experience indicates that an immune serum effective against Type I pneumococci has great value. Immune serums against other types, however, are at present not of therapeutic importance.

The Curability of Certain Cases of Chronic Nephritis

Dr. Alfred Stengel, Philadelphia: Chronic nephritis is not at all a chronic disease in the sense that it is a process which once initiated through the impetus originally given goes on and on as a progressive malady. There is required a repetition of stimuli or of assault similar to or the same as the original one. There is evidence to show the relation of nephritis to infections and the probability that repeated reinfections occasion a gradually increasing involvement of the kidneys. We have clinical evidence to show that removal of foci of infections is sometimes followed by an arrest of the disease or if the condition is not too far advanced, complete disappearance of symptoms.

DISCUSSION

Dr David Riesman, Philadelphia There are some conditions in which the discovery of the focus of infection is the cure of the condition This fact is not so well established for nephritis as it is for arthritis Heredity should be considered in studying the etiology of nephritis I have had under my care a child who had never been seriously ill but who died of chronic parenchymatous nephritis, evidently hereditary, since the father had had chronic interstitial nephritis There are also cases wrongly labeled chronic nephritis because of the finding of albumin A stone may be present which has given no classical symptoms but does cause irritation in the pelvis, perhaps of the kidney function, and gives albumin and casts In a case of a boy of 8 years who had had scanty urine with albumin for three years, removal of the enlarged tonsils was considered inadvisable because of the apparently hopeless chronic nephritis We took the tonsils out, however, and after three or four months the child began to improve, and he is in good health today

Dr George E Holtzapple, York In cases of chronic interstitial nephritis in persons of 40 or 50 years of age, I have been impressed with the frequency with which I get the history of scarlet fever in childhood Such persons apparently in good health suddenly develop symptoms of uremia Examination of the blood pressure reveals hypertension, the urine is pale, abundant in quantity, and of low specific gravity with a few casts and perhaps a little albumin

Some Phases of Chronic Colitis

Dr Edwin Zugsmith Pittsburgh It is probable that the persistent showing of any amount of mucus justifies the diagnosis of colitis Record has been made of a single evacuation of several pounds of mucus Toxic materials entering the body because of the loss of the selective power of the colon in absorbing material cause anemia and nervous irritability often diagnosed as neurasthenia Colitis is often a process secondary to infection of gums teeth, throat and nasal sinuses, of the bronchial tubes, probably of the gallbladder, incompetent functionating power of the liver and pancreas, dietetic errors, and the abuse of laxatives The relationship of colitis and appendicitis is very close The tendency to progressive stasis about the cecum subsequent to appendectomy indicates the need of after treatment in such cases with particular attention to the colon While colitis is often a secondary process it may give rise to other conditions, some of the worst cases of inflammatory rheumatism undoubtedly have their origin in a diseased colon Colitis is sometimes confused with other diseases, chiefly because the stool examination is omitted Careful examination revealing tenderness in the right iliac fossa would often save the embarrassment of the mistaken diagnosis of appendicitis Some cases of colitis are diagnosed ulcer of the stomach and duodenum on the history of pain after eating The teaching that such pain means ulcer is fallacious The proximity of the hepatic flexure to the gallbladder also confuses diagnosis Colitis is often confused with neurasthenia through carelessness The disease is essentially chronic That it cannot be cured is a pessimism beyond justification With proper food, hygiene and medication, many patients are cured and the majority are greatly improved The most efficient guide against dietary errors is the frequent microscopic examination of the stools Next in *importance to diet in the treatment* are hygienic regulations Olive oil injected into the sigmoid at night half a pint or more and allowed to remain over night, aids more than any other remedy in overcoming constipation

Chronic Intestinal Indigestion in Children

Dr. Robert K Rewalt, Williamsport Chronic intestinal indigestion is the most common ailment in children between the ages of 1 and 6 years It will usually be found that the child has been fed improperly for some time Treatment will give splendid results if the physician has the cooperation of the mother or nurse The child should be kept in bed until the temperature remains normal for three or four days A strict diet is the most important factor in treatment, consisting of milk and scraped beef or beef juice, four feedings a day may be given A more liberal diet is instituted gradually Intestinal irrigation is of much service in the presence of much mucus, and the fluid should be warm physiologic sodium chlorid solution, used once or twice a day Of the intestinal antiseptics, salol and the *Bacillus bulgaricus* have been of great value in certain cases, but the *Bacillus bulgaricus* must be used where there is a tendency to acidosis For the constipation, calomel and phenolphthalein, 1/10 grain of each, every half hour for ten doses, is admirable This may be continued every week for as long as is necessary The tincture of nux vomica is by far the best general tonic The bitter wine of iron in connection with Fowler's solution is of value in cases in which the secondary anemia persists

Value of the Roentgen Rays in the Diagnosis of Pulmonary Tuberculosis

Dr Willis F Manges, Philadelphia Tubercles of macroscopic size, whether miliary or conglomerate, cast recognizable shadows on the plate The presence of such shadows is essential to definite Roentgen diagnosis The lesion in the depth of the lung is as easily recognized as one at the surface This is not true of other methods of physical diagnosis The roentgenogram furnishes the best record as to extent and gross character of the lesion at any time and frequently reveals the presence of tuberculosis when the disease has been overlooked clinically Stereoroentgenograms of excellent quality are essential to negative diagnosis in any portion of the lungs

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Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Anatomy, Philadelphia

July XX No 1

1 Embryology of Bird's Lung W A Locy and O Larsell Chicago —p 1
2 Fusion of Cardiac Anlages and Formation of Cardiac Loop in Cat (Felis Domestica) H von W Schulte New York —p 45
3 Certain Cellular Elements in Celomic Cavities and Mesenchyma of Mammalian Embryo V E Emmel Chicago —p 73
4 Genesis Development and Adult Anatomy of Nasofrontal Region in Man J P Schaeffer Philadelphia —p 125

September No 2

5 Lachrymal Gland J Sundwall, Lawrence Kan —p *147*
6 Experimental Mitochondrial Changes in Pancreas in Phosphorus Poisoning W J M Scott Baltimore —p 237

American Journal of Public Health, Boston

October VI No 10

7 Plan for Education in Industrial Hygiene and Avoidance of Occupational Complaints J W Schereschewsky Washington D C —p *1031*
8 Methods and Results in Instruction in Personal Hygiene—Prospect of Improving Expectation of Life in Middle Age E C Howe Boston —p 1039
9 Study of Methods for Determining Air Dustiness G T Palmer L V Coleman and H C Ward, New York —p 1049
10 Control of Communicable Diseases in Schools S J Baker New York —p *1078*
11 West Virginia Flood of August 9, 1916 and Health Relief Measures M Tolman —p 1083
12 Six Months of Harrison Act C. E Terry Jacksonville Fla —p *1087*
13 Grading of Milk in Small Communities L R Williams New York —p 1093
14 Role Played by Public Health Nurse in Control of Communicable Diseases C J Hastings Toronto Canada —p 1100
15 What Ohio Is Doing to Conserve Life in Industries V T Noonan —p *1102*
16 Scarlet Fever During 1915 in Philadelphia M Ostheimer, Philadelphia —p 1104
17 Some Practical Methods of Bacteriologic Water Analysis and Results Obtained A V Graf and A G Nolte, St Louis —p 1109

Arkansas Medical Society Journal, Little Rock

October XIII No 5

18 Carriers and Epidemics C W Garrison Little Rock —p 91
19 Dysentery T F Hudson Luxora —p 95
20 Maxillary Sinusitis W T McCurry, Little Rock —p 100

Boston Medical and Surgical Journal

October 26 CLXXV No 17

21 Anterior Poliomyelitis A J McLaughlin Boston —p 587
22 *Occurrence and Diagnosis of Pericarditis E A Locke, Boston —p 590
23 *Frequency of Epilepsy in Offspring of Epileptics D A Thom, Palmer —p 599
24 Artificial Heliotherapy Mercury Vapor Quartz Light Valuable Therapeutic Agent J Bryant Boston —p 600
25 Treatment of Obesity by Rational Diet E E Cornwall Brooklyn —p 601
26 Streptococcus Mucosus Capsulatus as Cause of Mastoid Disease Report of Cases G Bacon New York —p 602
27 Case of Double Empyema Successfully Operated F B Lund and H Morrison, Boston —p 606

22 **Occurrence and Diagnosis of Pericarditis** —A study of the necropsy reports at the Boston City Hospital for the past nineteen years together with the clinical records of the same cases was made by Locke The total number of postmortem sections made was 3 683 Acute lesions of the pericardium were described in 150 and chronic lesions in 209 instances Exclusive of these 359 cases of true pericarditis, 88 showed milk patches in the pericardium Acute endocarditis was described in 185, or 5 per cent. and chronic endocarditis in 462, or 12 6 per cent Locke examined all the clinical records of the 150 cases of the acute form In only 27 instances or 17 per cent, is there any clear evidence in the clinical notes of the presence of disease of the pericardium There were 17 cases, with an effusion of 200 c c or more, the amount varying from this minimum to a maximum of 1 000 c c

In the group of acute cases the largest number are of the so-called fibrinous type although the fibrinous, serofibrinous purulent and adhesive forms are found with about equal frequency, the limits being 21 33 and 28 per cent The serofibrinous purulent and hemorrhagic, recognized clinically as pericarditis with effusion, together represent 50 7 per cent of the total acute cases Among the chronic types the serofibrinous and adherent forms distinctly predominate. This last mentioned group comprises approximately 46 per cent of the total In the 150 cases of acute pericarditis rheumatism was evident as the primary disease only twice Pneumonia was the cause in 63 cases, empyema in 6, tuberculosis in 7, local or general sepsis in 28, nephritis in 16, meningitis in 3, not determined in 17 cases

23 **Frequency of Epilepsy in Offspring of Epileptics** —That epilepsy is less often transmitted directly from parent to offspring than has heretofore been believed is the conclusion reached by Thom from a study of thirty-three cases

Georgia Medical Association Journal, Augusta

October VI No 6

28 Diagnosis of Duodenal Ulcer G M Niles Atlanta —p 99
29 Roentgenogram in Diagnosis of Renal Calculus C D Cleghorn Macon —p 103
30 Cutaneous Manifestations of Syphilis M B Hutchins Atlanta —p 105
31 *Two Cases of Tetanus Treated with Antitetanic Serum and Magnesium Sulphate Recovery L C Fischer Atlanta —p 108
32 Puerperal Septicemia R L Rogers Fairmont —p 110
33 Brotherhood of Physicians J L Weddington Dublin —p 111

31 Abstracted in THE JOURNAL, May 6 p 1490

Indiana State Medical Association Journal, Fort Wayne

September IX No 9

34 *Uronephrosis Its Significance and Detection H O Mertz Laporte.—p 351
35 Sequelae of Oral Foci of Infection C. D Lucas Indianapolis —p 361

34 Abstracted in THE JOURNAL, Nov 20, 1915, p 1846

Journal of Immunology, Baltimore

October I No 5

36 Cutaneous Reaction in Canine Distemper J A Kolmer M J Harkins and J Reichel Glenolden Pa —p 501
37 *Antibody Production by Typhoid Vaccines. H W Stoner Baltimore.—p 511
38 Can Specific Neurotoxin Be Obtained from Corpus Striatum? L M Moore San Francisco —p 525
39 Action of Amido Acids Peptids and Proteins on Hemolysis by Cobravenom E Zunz and P Gyorgy Brussels —p 531
40 Relation of Bronchisepticin Skin Reaction to Immunity in Canine Distemper Including Bactericidal Action of Dog Serum for B Bronchisepticus J A Kolmer T Matsunami and M J Harkins Glenolden Pa —p 571

37 **Antibody Production by Typhoid Vaccines.**—Stoner concludes from his experiments that as measured by the production of agglutinin, bacteriolysin and opsonin, sensitized vaccine possesses no distinct advantage over nonsensitized vaccine in the production of prophylactic typhoid immunity The reactions following the injections of prophylactic typhoid vaccine are about the same with both the sensitized and nonsensitized product Owing to lack of concrete evidence that prophylactic typhoid immunity is due wholly to phagocytic activity, and that sensitized vaccine produces an increased phagocytosis, the author shall still continue to recommend the use of nonsensitized vaccine.

Journal of Infectious Diseases, Chicago

November XIX No 5

41 *Specificity of Abderhalden Reaction with Vegetable Proteins O J Elsesser Chicago —p 655
42 *Complement Content of Eck Fistula Dogs N P Sherwood, C Smith and R West, Lawrence, Kan —p 682
43 *Permeability of Gastro Intestinal Wall to Infection with Sporothrix Schenckii D J Davis Chicago —p 688
44 Relation of Allantoin Excretion to Leukopenia and Leukocytosis in Rabbits O H P Pepper and T G Miller, Philadelphia —p 694
45 *Laboratory Infection Caused by Bovine Strain of Bacillus Enteritidis K F Meyer, San Francisco —p 700
46 Virulent Salt Solution Used in Production of Hog Cholera Serum W S Robbins East Lansing Mich —p 708
47 *Etiology of Fibromyoma of Uterus A H Curtis, Chicago —p 712
48 *Case of Anthrax G G Reinle and R A Archibald Oakland Calif —p 718
49 Comparison of Rate of Multiplication of Bacteria in Raw Milk with Rate in Pasteurized Milk. P W Allen Urbana Ill —p 721
50 Experimental Studies with Endameba Gros F Hecker Kansas City Mo —p 729
51 *Culture Media for Gonococcus. T Watabiki London —p 733

41 **Specificity of Abderhalden Reaction with Vegetable Proteins** —It is demonstrated bv Elsesser that the specificity of the Abderhalden reaction (dialysis method) in experimental animals (rabbits) immunized with pure isolated vegetable proteins is far from being absolute In comparing the results obtained by the Abderhalden test with those obtained by anaphylaxis, by Wells Osborne and Lake, using the same pure vegetable proteins in each case, it was found that the results present certain resemblances, but also often definite differences In either reaction the more closely the proteins are allied chemically and physically, the less specific the reactions tend to become On the whole, however, the results obtained by anaphylaxis are much more constant and specific

42 **Complement in Eck-Fistula Dogs** —The main result of this study appears to be the fact that there does not seem to be sufficient evidence as yet to warrant the assumption that the liver plays a more important role in the production of complement than do other organs or tissues of the body

43 **Permeability of Gastro-Intestinal Wall to Sporothrix** —Feeding this organism to rats, Davis found that it penetrates the normal mucosa of the intestinal tract, although no lesions active or healed were visible in the mucosa or in the wall of the stomach or intestines

45 **Laboratory Infection with Bacillus Enteritidis** —This paper presents clinical bacteriologic and serologic observations of an accidental laboratory infection A young man who apparently was predisposed to the infection on account of a chronic mucous colitis developed a severe gastro-enteritis ten hours after having handled a bottle of sterilized milk which was artificially contaminated with a culture of *Bacillus enteritidis* (Gärtner) The strain responsible for the infection had been isolated from the heart blood of a calf which had succumbed to infectious diarrhea Evidence is presented to show that a recently isolated strain of *B enteritidis* pathogenic for animals may differ from a strain pathogenic for man in its inability to be coagglutinated by paratyphoid or suipestifer serums

47 **Etiology of Fibromyoma of Uterus** —Attempts to secure cultures were made bv Curtis with selected material from eighty patients with uterine fibroids This material consisted of juices obtained by means of a meat crusher, and by grind-

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Dr Edwin Zugsmith, Pittsburgh It is probable that the persistent showing of any amount of mucus justifies the diagnosis of colitis Record has been made of a single evacuation of several pounds of mucus Toxic materials entering the body because of the loss of the selective power of the colon in absorbing material cause anemia and nervous irritability often diagnosed as neurasthenia Colitis is often a process secondary to infection of gums teeth throat and nasal sinuses, of the bronchial tubes probably of the gallbladder, incompetent functionating power of the liver and pancreas, dietetic errors, and the abuse of laxatives The relationship of colitis and appendicitis is very close The tendency to progressive stasis about the cecum subsequent to appendectomy indicates the need of after-treatment in such cases with particular attention to the colon While colitis is often a secondary process, it may give rise to other conditions, some of the worst cases of inflammatory rheumatism undoubtedly have their origin in a diseased colon Colitis is sometimes confused with other diseases chiefly because the stool examination is omitted Careful examination revealing tenderness in the right iliac fossa would often save the embarrassment of the mistaken diagnosis of appendicitis Some cases of colitis are diagnosed ulcer of the stomach and duodenum on the history of pain after eating The teaching that such pain means ulcer is fallacious The proximity of the hepatic flexure to the gallbladder also confuses diagnosis Colitis is often confused with neurasthenia through carelessness The disease is essentially chronic That it cannot be cured is a pessimism beyond justification With proper food, hygiene and medication, many patients are cured and the majority are greatly improved The most efficient guide against dietary errors is the frequent microscopic examination of the stools Next in importance to diet in the treatment are hygienic regulations Olive oil injected into the sigmoid at night half a pint or more, and allowed to remain over night aids more than any other remedy in overcoming constipation

Chronic Intestinal Indigestion in Children

Dr Robert K Rewalt Williamsport Chronic intestinal indigestion is the most common ailment in children between the ages of 1 and 6 years It will usually be found that the child has been fed improperly for some time Treatment will give splendid results if the physician has the cooperation of the mother or nurse The child should be kept in bed until the temperature remains normal for three or four days A strict diet is the most important factor in treatment, consisting of milk and scraped beef or beef juice, four feedings a day may be given A more liberal diet is instituted gradually Intestinal irrigation is of much service in the presence of much mucus, and the fluid should be warm physiologic sodium chlorid solution, used once or twice a day Of the intestinal antiseptics, salol and the *Bacillus bulgaricus* have been of great value in certain cases, but the *Bacillus bulgaricus* must be used where there is a tendency to acidosis For the constipation, calomel and phenolphthalein, 1/10 grain of each, every half hour for ten doses, is admirable This may be continued every week for as long as is necessary The tincture of nux vomica is by far the best general tonic The bitter wine of iron in connection with Fowler's solution is of value in cases in which the secondary anemia persists

Value of the Roentgen Rays in the Diagnosis of Pulmonary Tuberculosis

Dr Willis F Manges, Philadelphia Tubercles of macroscopic size whether miliary or conglomerate, cast recognizable shadows on the plate The presence of such shadows is essential to definite Roentgen diagnosis The lesion in the depth of the lung is as easily recognized as one at the surface This is not true of other methods of physical diagnosis The roentgenogram furnishes the best record as to extent and gross character of the lesion at any time and frequently reveals the presence of tuberculosis when the disease has been overlooked clinically Stereoroentgenograms of excellent quality are essential to negative diagnosis in any portion of the lungs

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Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Anatomy, Philadelphia

July XX, No 1

1 Embryology of Bird s Lung W A Locy and O Larsell, Chicago —p 1
2 Fusion of Cardiac Anlages and Formation of Cardiac Loop in Cat (Felis Domestica) H von W Schulte New York —p 45
3 Certain Cellular Elements in Celomic Cavities and Mesenchyma of Mammalian Embryo V E Emmel, Chicago —p 73
4 Genesis Development, and Adult Anatomy of Nasofrontal Region in Man J P Schaeffer Philadelphia —p 125

September No 2

5 Lachrymal Gland J Sundwall Lawrence, Kan —p 147
6 Experimental Mitochondrial Changes in Pancreas in Phosphorus Poisoning W J M Scott Baltimore —p 237

American Journal of Public Health, Boston

October VI No 10

7 Plan for Education in Industrial Hygiene and Avoidance of Occupational Complaints J W Schereschewsky Washington D C —p 1031
8 Methods and Results in Instruction in Personal Hygiene—Prospect of Improving Expectation of Life in Middle Age E C Howe Boston.—p 1039
9 Study of Methods for Determining Air Dustiness G T Palmer L V Coleman and H C Ward New York —p 1049
10 Control of Communicable Diseases in Schools S J Baker New York —p 1078
11 West Virginia Flood of August 9, 1916, and Health Relief Measures M Tolman —p 1083
12 Six Months of Harrison Act C E Terry, Jacksonville Fla —p 1087
13 Grading of Milk in Small Communities L R Williams, New York —p 1093
14 Role Played by Public Health Nurse in Control of Communicable Diseases C J Hastings Toronto Canada —p 1100
15 What Ohio Is Doing to Conserve Life in Industries V T Noonan —p 1102
16 Scarlet Fever During 1915 in Philadelphia M Ostheimer Philadelphia —p 1104
17 Some Practical Methods of Bacteriologic Water Analysis and Results Obtained A V Graf and A G Nolte, St Louis —p 1109

Arkansas Medical Society Journal, Little Rock

October VIII No 5

18 Carriers and Epidemics C W Garrison, Little Rock —p 91
19 Dysentery T F Hudson, Luxora.—p 95
20 Maxillary Sinusitis W T McCurry Little Rock —p 100

Boston Medical and Surgical Journal

October 26 CLXXV, No 17

21 Anterior Poliomyelitis A J McLaughlin Boston —p 587
22 *Occurrence and Diagnosis of Pericarditis E A Locke Boston —p 590
23 *Frequency of Epilepsy in Offspring of Epileptics D A Thom Palmer —p 599
24 Artificial Heliotherapy Mercury Vapor Quartz Light Valuable Therapeutic Agent J Bryant, Boston —p 600
25 Treatment of Obesity by Rational Diet E E Cornwall Brooklyn —p 601
26 Streptococcus Mucosus Capsulatus as Cause of Mastoid Disease Report of Cases G Bacon New York —p 602
27 Case of Double Empyema Successfully Operated F B Lund and H Morrison, Boston —p 606

22. **Occurrence and Diagnosis of Pericarditis** —A study of the necropsy reports at the Boston City Hospital for the past nineteen years together with the clinical records of the same cases was made by Locke The total number of postmortem sections made was 3 683 Acute lesions of the pericardium were described in 150 and chronic lesions in 209 instances Exclusive of these 359 cases of true pericarditis, 88 showed milk patches in the pericardium Acute endocarditis was described in 185, or 5 per cent, and chronic endocarditis in 462, or 12 6 per cent Locke examined all the clinical records of the 150 cases of the acute form In only 27 instances or 17 per cent, is there any clear evidence in the clinical notes of the presence of disease of the pericardium There were 17 cases, with an effusion of 200 c c or more, the amount varying from this minimum to a maximum of 1,000 c c

In the group of acute cases the largest number are of the so-called fibrinous type although the fibrinous, serofibrinous, purulent and adhesive forms are found with about equal frequency, the limits being 21 33 and 28 per cent The serofibrinous, purulent and hemorrhagic, recognized clinically as pericarditis with effusion, together represent 50 7 per cent of the total acute cases Among the chronic types the serofibrinous and adherent forms distinctly predominate This last mentioned group comprises approximately 46 per cent of the total In the 150 cases of acute pericarditis rheumatism was evident as the primary disease only twice Pneumonia was the cause in 63 cases, empyema in 6, tuberculosis in 7, local or general sepsis in 28, nephritis in 16, meningitis in 3, not determined in 17 cases

23 **Frequency of Epilepsy in Offspring of Epileptics** —That epilepsy is less often transmitted directly from parent to offspring than has heretofore been believed is the conclusion reached by Thom from a study of thirty-three cases

Georgia Medical Association Journal, Augusta

October VI No 6

28 Diagnosis of Duodenal Ulcer G M Niles Atlanta —p 99
29 Roentgenogram in Diagnosis of Renal Calculus C D Cleghorn Macon —p 103
30 Cutaneous Manifestations of Syphilis M B Hutchins Atlanta —p 105
31 *Two Cases of Tetanus Treated with Antitetanic Serum and Magnesium Sulphate Recovery L C Fischer Atlanta —p 108
32 Puerperal Septicemia R L Rogers Fairmont —p 110
33 Brotherhood of Physicians J L Weddington, Dublin —p 111

31 Abstracted in The Journal May 6, p 1490

Indiana State Medical Association Journal, Fort Wayne

September IX No 9

34 *Uronephrosis Its Significance and Detection H O Mertz, Laporte —p 351
35 Sequelae of Oral Foci of Infection C D Lucas Indianapolis —p 361

34 Abstracted in The Journal, Nov 20, 1915, p 1846

Journal of Immunology, Baltimore

October I No 5

36 Cutaneous Reaction in Canine Distemper J A Kolmer M J Harkins and J Reichel Glenolden Pa —p 501
37 *Antibody Production by Typhoid Vaccines H W Stoner Baltimore —p 511
38 Can Specific Neurotoxin Be Obtained from Corpus Striatum? I M Moore, San Francisco —p 525
39 Action of Amido Acids Peptids and Proteins on Hemolysis by Cobravenom. E Zunz and P György Brussels —p 531
40 Relation of Bronchisepticin Skin Reaction to Immunity in Canine Distemper Including Bactericidal Action of Dog Serum for B Bronchisepticus J A Kolmer T Matsunami and M J Harkins Glenolden Pa —p 571

37 **Antibody Production by Typhoid Vaccines** —Stoner concludes from his experiments that as measured by the production of agglutinin, bacteriolysin and opsonin, sensitized vaccine possesses no distinct advantage over nonsensitized vaccine in the production of prophylactic typhoid immunity The reactions following the injections of prophylactic typhoid vaccine are about the same with both the sensitized and nonsensitized product Owing to lack of concrete evidence that prophylactic typhoid immunity is due wholly to phagocytic activity, and that sensitized vaccine produces an increased phagocytosis, the author shall still continue to recommend the use of nonsensitized vaccine.

Journal of Infectious Diseases, Chicago

November XIX No 5

41 *Specificity of Abderhalden Reaction with Vegetable Proteins O J Elsesser Chicago —p 655
42 *Complement Content of Eck Fistula Dogs N P Sherwood C Smith and R West Lawrence Kan —p 682
43 *Permeability of Gastro Intestinal Wall to Infection with Sporothrix Schenckii D J Davis Chicago —p 688
44 Relation of Allantoin Excretion to Leukopenia and Leukocytosis in Rabbits O H P Pepper and T G Miller, Philadelphia —p 694
45 *Laboratory Infection Caused by Bovine Strain of Bacillus Enteritidis K F Meyer San Francisco —p 700
46 Virulent Salt Solution Used in Production of Hog Cholera Serum W S Robbins East Lansing Mich —p 708
47 *Etiology of Fibromyoma of Uterus A. H Curtis Chicago —p 712
48 *Case of Anthrax G G Reinle and R A Archibald Oakland Calif —p 718
49 Comparison of Rate of Multiplication of Bacteria in Raw Milk with Rate in Pasteurized Milk. P W Allen Urbana Ill —p 721
50 Experimental Studies with Endameba Gros F Hecker Kansas City Mo —p 729
51 *Culture Media for Gonococcus. T Watabiki London —p 733

41 **Specificity of Abderhalden Reaction with Vegetable Proteins** —It is demonstrated by Elsesser that the specificity of the Abderhalden reaction (dialysis method) in experimental animals (rabbits) immunized with pure isolated vegetable proteins is far from being absolute In comparing the results obtained by the Abderhalden test with those obtained by anaphylaxis, by Wells Osborne and Lake, using the same pure vegetable proteins in each case, it was found that the results present certain resemblances but also often definite differences In either reaction the more closely the proteins are allied chemically and physically, the less specific the reactions tend to become On the whole, however, the results obtained by anaphylaxis are much more constant and specific

42 **Complement in Eck-Fistula Dogs** —The main result of this study appears to be the fact that there does not seem to be sufficient evidence, as yet, to warrant the assumption that the liver plays a more important role in the production of complement than do other organs or tissues of the body

43 **Permeability of Gastro-Intestinal Wall to Sporothrix** —Feeding this organism to rats, Davis found that it penetrates the normal mucosa of the intestinal tract, although no lesions active or healed were visible in the mucosa or in the wall of the stomach or intestines

45 **Laboratory Infection with Bacillus Enteritidis** —This paper presents clinical, bacteriologic and serologic observations of an accidental laboratory infection A young man who apparently was predisposed to the infection on account of a chronic mucous colitis developed a severe gastro enteritis ten hours after having handled a bottle of sterilized milk which was artificially contaminated with a culture of *Bacillus enteritidis* (Gartner) The strain responsible for the infection had been isolated from the heart blood of a calf which had succumbed to infectious diarrhea Evidence is presented to show that a recently isolated strain of *B enteritidis* pathogenic for animals may differ from a strain pathogenic for man in its inability to be coagglutinated by paratyphoid or suipestifer serums

47 **Etiology of Fibromyoma of Uterus** —Attempts to secure cultures were made by Curtis with selected material from eighty patients with uterine fibroids This material consisted of juices obtained by means of a meat crusher, and by grind-

ing Forty-five specimens yielded no growth and twenty-two more were essentially negative Thirteen gave positive findings In six of these the endometrium was studied with positive results in two cases and negative results in four In two instances in which the patients had suffered from previous pelvic infection the diseased tissues were ground and cultured in a search for growth similar to that obtained from the fibroids The mediums remained sterile Diphtheroid bacilli, streptococci and small gram-positive bacilli were most often found None of these exhibited virulence for animals There was no tendency to produce new growth in the uteri and other pelvic organs of animals inoculated A causal relationship between bacterial invasion of the uterus and the development of fibroid tumors was not evident, the small percentage of cases which yielded growth, the considerable variety of the bacteria isolated, and the lack of pathogenicity for inoculated animals, permit no other deduction

48 **Case of Anthrax**—This case is remarkable in that there were in all five pustules on the patient's arm and excision, which most authorities believe to be the classical method of treatment was not resorted to Antianthrax serum it appears, played an important role in bringing about recovery Following the first dose of serum all the lesions became less progressive in appearance, and the progress of the fifth pustule which appeared on the day treatment was commenced, was arrested immediately Furthermore, the temperature curve seems to have been influenced by something other than the patient's own reactive powers, it gradually ascended until it reached the maximum of 103 F thirty-six hours after the use of the antianthrax serum had been commenced, and then decreased as immunity and convalescence became established reaching normal in about eighty-four hours Another interesting point is that on the seventh day after the serum treatment had been commenced smears and cultures from secretions underneath the crusts, which were raised to permit drainage failed to reveal the presence of the anthrax bacillus or of any other infection Coincident with improvement in the patient s condition the eosinophils became a factor in the blood picture With signs of relapse due to drainage of secretions from the pustules into the neighboring subcutaneous tissue the eosinophilia disappeared When this situation was relieved, the eosinophilia reappeared and then gradually subsided as convalescence progressed

51 **Culture Media for Gonococcus**—Watabiki has used as a substitute for blood agar the following medium 200 c c of cow s milk are warmed to 60 C and 5 per cent ascitic agar is added drop by drop, the milk being shaken to cause precipitation of the casein It is then filtered through filter paper To the filtrate is added 10 per cent caustic soda solution up to the point of slight alkalinity, and then 2 gm of urea The clear colorless fluid is sterilized at 60 C for thirty minutes every day for three days The sterilized fluid is then mixed with melted 0 3 per cent nutrose agar at 45 C in the proportion of 1 part of the fluid to 2 parts of agar Plate or slant forms are prepared as needed The medium must be incubated before use to make sure that no micro-organisms have gained access during preparation When fluid mediums are needed equal parts of the fluid and of ordinary broth or peptone water are mixed It is very necessary that the fluid should not be heated above 70 C, as unsatisfactory results frequently follow the use of the fluid heated at a higher temperature For the precipitation of casein the amount of acid is not constant, the different samples of milk undoubtedly varying in quality

Journal of Nervous and Mental Diseases, Lancaster, Pa

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52 *Obstetric Paralysis J J Thomas and J W Sever Boston —p 289
53 *Convulsive Spasm of Face Produced by Cerebellopontine Tumors H Cushing Boston —p 312
54 *Facial Diplegia in Multiple Neuritis H T Patrick Chicago —p 322

52 and 54 Abstracted in The Journal June 17, p 2036
53 Abstracted in The Journal, June 10, p 1886

Journal of Pharmacology and Experimental Therapeutics, Baltimore

October IX No 1

55 *How Rapidly Does Intact Thyroid Elaborate Its Specific Iodin Containing Hormone? D Marine and J M Rogoff Cleveland —p 1
56 *Antagonism Between Atropin and Certain Central Emetics C Eggleston New York —p 11
57 *Elimination of Strychnin by Kidneys R A Hatcher and M I Smith New York —p 27
58 *Pharmacology of Aconitum Heterophylloides A Nagarum and A Napellus T R Fraser Edinburgh —p 43
59 Effect on Tadpoles of Feeding Thyroid Products Obtained by Alkaline Hydrolysis J M Rogoff and D Marine Cleveland —p 57

55 **How Rapidly Does Intact Thyroid Elaborate Its Specific Iodin Containing Hormone?**—Marine and Rogoff found that following the injection of 50 mg of potassium iodid into the circulation definite histologic changes (always involutionary) can be detected within twenty hours in favorable cases The more marked the hyperplasia the more readily they are detected Definite differences in the pharmacologic activity of control and iodized thyroid lobes can be detected as early as the eighth hour This difference becomes well marked by the twentieth hour These facts indicate that morphologic changes are closely related in time and dependent on the elaboration of the iodin containing hormone and that the generally held view that involutionary changes in the gland are the results of a decrease in functional activity of the thyroid cells and a storage and an increase of the pharmacologically active principle—the iodin containing hormone—in the gland is essentially correct The storage of iodin in the thyroid from salts of this element is practically instantaneous while the elaboration of the hormone is slow Variations in the rate of formation of the active substance when taken in connection with the normal occurrence of iodin in the thyroid in both an active and an inactive form suggest the physiologic importance of the mother substance with which the iodin is combined

56 **Antagonism Between Atropin and Emetics**—*It is* claimed by Eggleston on the basis of experimental study that atropin and hyoscyamin are capable of antagonizing the vomiting produced in dogs by some central emetics—pilocarpin and nicotin—and are incapable of antagonizing that of other central emetics—morphin, apomorphin aconitin emetin and ouabain The antagonism of atropin or hyoscyamin toward the emetic action of pilocarpin and nicotin is not of a chemical nature but is physiologic and takes place on the center The observations suggest a complexity of the vomiting center including at least two different points of action or sets of receptors, for chemical stimuli The one is stimulated by pilocarpin and nicotin and depressed by atropin The other is stimulated by morphin, etc, but not by pilocarpin and nicotin and is not depressed by atropin

57 **Elimination of Strychnin by Kidneys**—Strychnin often appears in the urine within a few minutes after its administration but only in the merest traces, and Hatcher and Smith caution that one should distinguish sharply between this prompt appearance of the merest traces and the rapid rate of elimination that accompanies excessive diuresis Large doses of strychnin sulphate may be injected intravenously into dogs without the appearance of more than traces in the absence of copious diuresis within periods of two and a half to five and a half hours In every one of seventeen experiments on dogs in which diuresis was actively induced the strychnin was eliminated at a relatively rapid rate by the kidneys but nevertheless, in none of the fourteen experiments in which the amount of strychnin administered exceeded the average fatal dose by 20 per cent or more was the amount eliminated in the urine during copious diuresis equal to the excess over the average fatal dose—in other words, the renal elimination alone was never sufficient to save the animal s life

The authors suggest that it is possible that diuresis may contribute to the successful therapeutic treatment in those cases in which the amount taken is only slightly in excess of the minimal dose that would be fatal in the absence of treatment, or in cases in which the absorption of the poison s very slow, but it must play a minor role in the treatment of poisoning in cases in which very large doses of strychnin have been taken and in such cases artificial respiration and general anesthesia with ether and chloroform must continue to be the chief reliance Hydrated chloral would seem to be contraindicated in such cases because of its tendency to exert its depressant action after the need for it has ceased

58 **Pharmacology of Aconitum Heterophylloides**—Fraser's experiments indicate that *A heterophylloides* and, probably, *A nagarum* contain a preponderance of pseudo aconitin, or a similarly acting alkaloid, whereas *A napellus* contains a preponderance of aconitin

Journal-Lancet, Minneapolis

October 15 XXXVI No 20

60 *Fundamental Principles Underlying Treatment of Heart Disease C L Greene, St Paul—p 587
61 Chlorin as Therapeutic Agent M B Haldorson, Souris, N D—p 596
62 Infection Theory of Preeclamptic Toxemia and Eclampsia R T La Vake Minneapolis—p 600

60 **Treatment of Heart Disease**—The general attitude of medical men toward especially serious or apparently hopeless cases of cardiovascular disease, traditional attitude of hopelessness, Greene says, leads to the abandonment of many cases long before such a step is necessary, and involves the loss of many opportunities to win a victory in the face of what may seem certain defeat Quite as striking and no less disastrous; is the assumption that little can be done for the disease of the primary degenerative type which occur in elderly people Many a fine old gentleman is permitted to drift along with steadily but almost imperceptibly failing faculties and strength when a little care and treatment at the proper time, and repeated as may be necessary, will greatly prolong his life, and for considerable periods retard the sequelae of the senile degenerative processes Greene states emphatically that at the present time the cardiopath is not receiving at the hands of medical men either the comfort or the length of days readily obtainable in a great majority of instances by the intelligent application of modern methods of diagnosis and treatment

Nebraska State Medical Journal, Omaha

October I No 4

63 Uterine Cancer E B Brooks Pawnee City—p 99
64 Deep Roentgen Therapy A F Tyler Omaha—p 103
65 Roentgen Ray Immunity F H Kuegle and M G Wohl Omaha—p 106
66 Practical Roentgen Ray Pointers W H Mick Omaha—p 109
67 Cranial Fractures from Standpoint of Neurologist G A Young Omaha—p 112

New York Medical Journal

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68 Medical Treatment of Goiter J M Anders Philadelphia—p 773
69 Early Diagnosis of Tuberculosis E O Otis Boston—p 775
70 Removal of Third Lobe of Cystic Goiter A E Gallant, New York—p 778
71 Focal Points of Infection N P Barnes, Washington D C—p 779
72 Laryngeal Abscess Report of Three Cases M J Ballin New York—p 781
73 Leiomyoma of Pylorus J R Eastman and H K Bonn Indianapolis—p 785
74 Gravid Uterus Duplex W R Jackson Mobile Ala—p 788
75 Tuberculosis of Bronchial Lymph Nodes M E Lapham Highlands N C—p 789
76 Pyorrhea Alveolaris R G Hutchinson, Jr New York—p 795
77 Chauffeur's Fracture of Radius A C Burnham New York—p 797
78 Pseudoscarlatina B Frankel New York—p 799

New York State Journal of Medicine

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79 *Results of Cranial Decompression in Selected Types of Cerebral Spastic Paralysis Due to Hemorrhage W Sharpe New York—p 475
80 Types of Cerebral Defect in Children That May Be Benefited by Operation H G Matzinger Buffalo—p 484
81 *Vision of Schoolchild P Lewis Buffalo—p 486
82 Therapeutic Importance of Scientifically Conducted Health Resort W B James New York—p 489
83 Scope of Practicable Examination in Routine School Medical Inspection C P McCord, Albany—p 493
84 Diagnosis and Treatment of Ureteral Calculi E Beer, New York—p 501
85 Diagnosis of Renal Tuberculosis T F Laurie, Auburn—p 503
86 Contract Practice J V Woodruff, Buffalo—p 507
87 *Postoperative Ventral Hernia E MacD Stanton Schenectady—p 511
88 Education of Health Officers F Overton Patchogue—p 515
89 Roentgenography of Mastoid F M Law New York—p 517

79 **Cranial Decompression in Cerebral Spastic Paralysis**—This paper is a report of the operative treatment of 219 selected cases of spastic paralysis showing intracranial pressure both by an ophthalmoscopic examination and the measurement of the pressure of the cerebrospinal fluid at lumbar puncture, these operated patients up to April 1, 1916, are the ones selected as being suitable for the operation from the examination of 954 cases of spastic paralysis, that is, one in about every four cases examined The operations which have been used in the past and are still being used to improve the conditions of spastic paralysis, namely, tenotomies, tendon lengthenings, sections of the posterior nerve root alcohol injections of peripheral nerves nerve resections and other operations, are, in Sharpe's opinion, of only temporary benefit, and he says he has yet to see a case in which the spasticity has not returned, in some degree, within one year In all of his cases treated by the operations just mentioned during the past two and one-half years, the spasticity began to reappear within one year after operation

The improvement in cases selected for operation has been so marked—not only a lessening of the spasticity, but a definite amelioration of the mental condition of the patient—and Sharpe believes a cranial decompression is indicated in those cases of spastic paralysis showing an increased intracranial pressure by the ophthalmoscopic examination and confirmed by a measurement of the pressure of the cerebrospinal fluid at lumbar puncture Of the 954 cases of spastic paralysis examined, about 26 per cent have shown signs of intracranial pressure, and are, therefore, patients that can be very much improved

81 Abstracted in The Journal, June 3 p 1815

87 **Postoperative Ventral Hernia**—Following the 500 laparotomies analyzed by Stanton there developed twenty-four hernias Of these operations 456 were performed through midline or rectus incisions followed by twenty-one hernias Each of these twenty-one hernias developed as the direct result of an insufficiently firm union of the fascia layers lying anterior and posterior to the rectus muscles Stanton emphasizes the fact that in rectus and midline, and also in kidney incisions, it is the fascia which must be relied on to give permanent security to the scar The technic which gives the best union of the divided fascia layers will give the fewest hernias The fascia of the posterior sheath is the first line of defense Suturing the peritoneum does not necessarily mean that the fascia is also sutured In the case of rectus and midline incisions unless excessively large drains are employed the prognosis as regards subsequent hernia after the use of drainage will depend on the character of fascia union obtained in the sutured portion of the wound

Ohio State Medical Journal, Columbus

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90 Medical Side of Glaucoma A Knapp New York—p 663
91 Closure of Large Breast Wounds J L Ransohoff Cincinnati—p 666
92 Castration by Patient Report of Case J W Fitch Portsmouth—p 669
93 Plea for Electrocautery in Treatment of Laryngeal Tuberculosis S Iglauer Cincinnati—p 670
94 Dual Personality C W Stone Cleveland—p 672
95 Some Diseases Resulting from Infection of Mouth and Upper Air Passages A H Herr Lima—p 674
96 Indications and Value of Gastric Lavage as Therapeutic Agency E S Jones Painesville—p 677

Tennessee State Medical Association Journal, Nashville

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97 Some Features of History Taking W H Witt Nashville—p 229
98 Etiology of Tuberculosis C A Robertson Ridgetop—p 234
99 Dacryocystitis as Predisposing Cause of Corneal Ulcers L M Scott Jellico—p 238

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Journal of Pharmacology and Experimental Therapeutics, Baltimore

October IX No 1

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58 *Pharmacology of Aconitum Heterophylloides A Nagarum and A Napellus T R Fraser, Edinburgh—p 43

59 Effect on Tadpoles of Feeding Thyroid Products Obtained by Alkaline Hydrolysis J M Rogoff and D Marine Cleveland—p 57

55 **How Rapidly Does Intact Thyroid Elaborate Its Specific Iodin Containing Hormone?**—Marine and Rogoff found that following the injection of 50 mg of potassium iodid into the circulation definite histologic changes (always involutionary) can be detected within twenty hours in favorable cases The more marked the hyperplasia the more readily they are detected Definite differences in the pharmacologic activity of control and iodized thyroid lobes can be detected as early as the eighth hour This difference becomes well marked by the twentieth hour These facts indicate that morphologic changes are closely related in time and dependent on the elaboration of the iodin containing hormone and that the generally held view that involutionary changes in the gland are the results of a decrease in functional activity of the thyroid cells and a storage and an increase of the pharmacologically active principle—the iodin containing hormone—in the gland is essentially correct The storage of iodin in the thyroid from salts of this element is practically instantaneous while the elaboration of the hormone is slow Variations in the rate of formation of the active substance when taken in connection with the normal occurrence of iodin in the thyroid in both an active and an inactive form suggest the physiologic importance of the mother substance with which the iodin is combined

56 **Antagonism Between Atropin and Emetics**—It is claimed by Eggleston on the basis of experimental study that atropin and hyoscyamin are capable of antagonizing the vomiting produced in dogs by some central emetics—pilocarpin and nicotin—and are incapable of antagonizing that of other central emetics—morphin apomorphin aconitin emetin and ouabain The antagonism of atropin or hyoscyamin toward the emetic action of pilocarpin and nicotin is not of a chemical nature but is physiologic and takes place on the center The observations suggest a complexity of the vomiting center including at least two different points of action, or sets of receptors for chemical stimuli The one is stimulated by pilocarpin and nicotin and depressed by atropin The other is stimulated by morphin, etc but not by pilocarpin and nicotin and is not depressed by atropin

57 **Elimination of Strychnin by Kidneys**—Strychnin often appears in the urine within a few minutes after its administration but only in the merest traces, and Hatcher and Smith caution that one should distinguish sharply between this prompt appearance of the merest traces and the rapid rate of elimination that accompanies excessive diuresis Large doses of strychnin sulphate may be injected intravenously into dogs without the appearance of more than traces in the absence of copious diuresis within periods of two and a half to five and a half hours In every one of seventeen experiments on dogs in which diuresis was actively induced the strychnin was eliminated at a relatively rapid rate by the kidneys but nevertheless, in none of the fourteen experiments in which the amount of strychnin administered exceeded the average fatal dose by 20 per cent or more was the amount eliminated in the urine during copious diuresis equal to the excess over the average fatal dose—in other words, the renal elimination alone was never sufficient to save the animal's life

The authors suggest that it is possible that diuresis may contribute to the successful therapeutic treatment in those cases in which the amount taken is only slightly in excess of the minimal dose that would be fatal in the absence of treatment, or in cases in which the absorption of the poison is very slow, but it must play a minor role in the treatment of poisoning in cases in which very large doses of strychnin have been taken and in such cases artificial respiration and general anesthesia with ether and chloroform must continue to be the chief reliance Hydrated chloral would seem to be contraindicated in such cases because of its tendency to exert its depressant action after the need for it has ceased

58 **Pharmacology of Aconitum Heterophylloides**—Fraser's experiments indicate that *A heterophylloides* and probably, *A nagarum* contain a preponderance of pseudo-aconitin, or a similarly acting alkaloid, whereas *A napellus* contains a preponderance of aconitin

Journal-Lancet, Minneapolis

October 15 XXXVI No 20

60 *Fundamental Principles Underlying Treatment of Heart Disease C L Greene St Paul—p 587
61 Chlorin as Therapeutic Agent M B Haldorson, Souris N D—p 596
62 Infection Theory of Preeclamptic Toxemia and Eclampsia R T La Vake Minneapolis—p 600

60 **Treatment of Heart Disease**—The general attitude of medical men toward especially serious or apparently hopeless cases of cardiovascular disease, traditional attitude of hopelessness, Greene says, leads to the abandonment of many cases long before such a step is necessary, and involves the loss of many opportunities to win a victory in the face of what may seem certain defeat Quite as striking, and no less disastrous, is the assumption that little can be done for the disease of the primary degenerative type which occur in elderly people Many a fine old gentleman is permitted to drift along with steadily but almost imperceptibly failing faculties and strength when a little care and treatment at the proper time, and repeated as may be necessary, will greatly prolong his life and for considerable periods retard the sequelae of the senile degenerative processes Greene states emphatically that at the present time the cardiopath is not receiving at the hands of medical men either the comfort or the length of days readily obtainable in a great majority of instances by the intelligent application of modern methods of diagnosis and treatment

Nebraska State Medical Journal, Omaha

October I No 4

63 Uterine Cancer E B Brooks, Pawnee City—p 99
64 Deep Roentgen Therapy A F Tyler Omaha—p 103
65 Roentgen Ray Immunity F H Kuegle and M G Wohl Omaha—p 106
66 Practical Roentgen Ray Pointers W H Mick Omaha—p 109
67 Cranial Fractures from Standpoint of Neurologist G A Young Omaha—p 112

New York Medical Journal

October 21 CIV No 17

68 Medical Treatment of Goiter J M Anders Philadelphia—p 773
69 Early Diagnosis of Tuberculosis E O Otis Boston—p 775
70 Removal of Third Lobe of Cystic Goiter A E Gallant New York—p 778
71 Focal Points of Infection N P Barnes Washington D C—p 779
72 Laryngeal Abscess Report of Three Cases M J Ballin New York—p 781
73 Leiomyoma of Pylorus J R Eastman and H K Bonn Indianapolis—p 785
74 Gravid Uterus Duplex W R Jackson Mobile Ala—p 788
75 Tuberculosis of Bronchial Lymph Nodes. M E Lapham Highlands N C—p 789
76 Pyorrhea Alveolaris R G Hutchinson, Jr New York—p 795
77 Chauffeur's Fracture of Radius A C Burnham New York—p 797
78 Pseudoscarlatina B Frankel New York—p 799

New York State Journal of Medicine

October XVI No 10

79 *Results of Cranial Decompression in Selected Types of Cerebral Spastic Paralysis Due to Hemorrhage W Sharpe New York—p 475
80 Types of Cerebral Defect in Children That May Be Benefited by Operation H G Matzinger Buffalo—p 484
81 Vision of Schoolchild P Lewis Buffalo—p 486
82 Therapeutic Importance of Scientifically Conducted Health Resort W B James New York—p 489
83 Scope of Practicable Examination in Routine School Medical Inspection C P McCord, Albany—p 493
84 Diagnosis and Treatment of Ureteral Calculi E Beer, New York—p 501
85 Diagnosis of Renal Tuberculosis T F Laurie Auburn—p 503
86 Contract Practice J V Woodruff, Buffalo—p 507
87 *Postoperative Ventral Hernia E MacD Stanton, Schenectady—p 511
88 Education of Health Officers F Overton, Patchogue—p 515
89 Roentgenography of Mastoid F M Law, New York—p 517

79 **Cranial Decompression in Cerebral Spastic Paralysis**—This paper is a report of the operative treatment of 219 selected cases of spastic paralysis showing intracranial pressure both by an ophthalmoscopic examination and the measurement of the pressure of the cerebrospinal fluid at lumbar puncture, these operated patients up to April 1, 1916, are the ones selected as being suitable for the operation from the examination of 954 cases of spastic paralysis, that is, one in about every four cases examined The operations which have been used in the past and are still being used to improve the conditions of spastic paralysis, namely, tenotomies, tendon lengthenings, sections of the posterior nerve root alcohol injections of peripheral nerves, nerve resections and other operations, are in Sharpe's opinion, of only temporary benefit, and he says he has yet to see a case in which the spasticity has not returned, in some degree, within one year In all of his cases treated by the operations just mentioned during the past two and one-half years, the spasticity began to reappear within one year after operation

The improvement in cases selected for operation has been so marked—not only a lessening of the spasticity, but a definite amelioration of the mental condition of the patient—and Sharpe believes a cranial decompression is indicated in those cases of spastic paralysis showing an increased intracranial pressure by the ophthalmoscopic examination and confirmed by a measurement of the pressure of the cerebrospinal fluid at lumbar puncture Of the 954 cases of spastic paralysis examined, about 26 per cent have shown signs of intracranial pressure, and are, therefore, patients that can be very much improved

81 Abstracted in The Journal, June 3, p 1815

87 **Postoperative Ventral Hernia**—Following the 500 laparotomies analyzed by Stanton there developed twenty-four hernias Of these operations 456 were performed through midline or rectus incisions followed by twenty-one hernias Each of these twenty-one hernias developed as the direct result of an insufficiently firm union of the fascia layers lying anterior and posterior to the rectus muscles Stanton emphasizes the fact that in rectus and midline, and also in kidney incisions it is the fascia which must be relied on to give permanent security to the scar The technic which gives the best union of the divided fascia layers will give the fewest hernias The fascia of the posterior sheath is the first line of defense Suturing the peritoneum does not necessarily mean that the fascia is also sutured In the case of rectus and midline incisions unless excessively large drains are employed the prognosis as regards subsequent hernia after the use of drainage will depend on the character of fascia union obtained in the sutured portion of the wound

Ohio State Medical Journal, Columbus

October XII No 11

90 Medical Side of Glaucoma A Knapp New York—p 663
91 Closure of Large Breast Wounds J L Ransohoff Cincinnati—p 666
92 Castration by Patient Report of Case J W Fitch Portsmouth—p 669
93 Plea for Electrocautery in Treatment of Laryngeal Tuberculosis S Iglauer Cincinnati—p 670
94 Dual Personality C W Stone, Cleveland—p 672
95 Some Diseases Resulting from Infection of Mouth and Upper Air Passages A H Herr Lima—p 674
96 Indications and Value of Gastric Lavage as Therapeutic Agency E S Jones Painesville—p 677

Tennessee State Medical Association Journal, Nashville

October IX No 6

97 Some Features of History Taking W H Witt Nashville—p 229
98 Etiology of Tuberculosis C A Robertson Ridgetop—p 234
99 Dacryocystitis as Predisposing Cause of Corneal Ulcers L M Scott Jellico—p 238

100 *Treatment of Hip Disease A G Nichol Nashville—p 242
101 Prostatic Problem G P Zirkle, Kingston—p 244
102 *Analysis of One Hundred Consecutive Cases of Appendicitis Operated on at Newell Clinic E D Newell, Chattanooga—p 246
103 *Tuberculosis of Colon W C Dixon, Nashville—p 248
104 Cooperation with Proprietary Preparations K S Howlett, Franklin—p 250
105 Senile Prostatic Hypertrophy H L Fancher, Chattanooga—p 253
106 Surgical Treatment of Some Tubercular Conditions W B Burns Memphis—p 254

100 and 102 Abstracted in The Journal April 22, pp 1348 and 1349

103 Abstracted in The Journal, April 22, p 1347

Vermont Medicine, Rutland

September I No 9

107 *Surgery of Thyroid C A Porter Boston—p 249
108 Some Features of Epidemic Poliomyelitis C S Caverly, Rutland—p 260

107 **Surgery of Thyroid**—Of eighty-five patients operated on by Porter twenty are absolutely cured, eighteen much improved, thirteen improved four not improved and are requiring further operation, sixteen have not reported or done so in too general terms to be valuable for statistics If then, Porter says a patient has had a reasonable course of rest, medical treatment and Roentgen-ray treatment (if this proves to be really and permanently satisfactory) and the symptoms persist operation should be advised Among wage earners who cannot give up the time and in the chronic cases in which the disease has advanced too far to allow of delay after preliminary rest operation should be performed Whether this be a preliminary ligation or lobectomy under local or general anesthesia must be determined in each case Finally, in chronic cases in which there is doubt as to whether the patient is suffering from existing toxemia or has been poisoned irreparably by the disease, modern tests of which basal metabolism is probably the most important will aid the surgeon much in deciding for or against operation

Wisconsin Medical Journal, Milwaukee

October XV No 5

109 Symptoms and Diagnosis of Accessory Sinus Diseases A G Kreutzer Milwaukee—p 142
110 General Considerations in Treatment of Fractures H Reineking, Milwaukee—p 145
111 Infantile Paralysis Its Management from Standpoint of Orthopedist F J Gaenslen Milwaukee—p 148
112 Blood Sugar J P Canavan and A W Dahlstrom, Milwaukee—p 151

FOREIGN

Titles marked with an asterisk (*) are abstracted below Single case reports and trials of new drugs are usually omitted

British Medical Journal, London

October 7 II No 2910

1 *Simple Modification of Guillotine or Flapless Method of Amputation Forceps Tourniquet J L Thomas—p 481
2 *Intraspinal Treatment of Syphilis of Central Nervous System Report of Cases A R Robertson—p 482
3 *New Ulcerative Dermatomycosis A Castellani—p 486
4 Further Experiments on Ascaris Infection F H Stewart—p 486
5 *Vaccine in Mediastinal Actinomycosis W S Malcolm—p 488
6 *Postmortem Findings in Case of Exophthalmos of Long Standing Originally Due to Exophthalmic Goiter R Mackinnon—p 488
7 Universal Leg Frame, Splint and Cradle Combined M J Chevers—p 489

1 **Emergency Amputations in Military Surgery**—The modification which appeals to Thomas is that which consists in making two lateral incisions through the apparently healthy soft tissues right down to the bone The upper or proximal extensions of the lateral incisions are determined by the point at which sufficient soft tissues can be obtained to give ample covering for the bone The main indications are speed and simplicity The following are the essential points in carrying out the circular amputation with lateral incisions The level at which the section of the bone is to be made must first be determined The proximal ends of the lateral incisions begin at this determined point, and are [illegible] bone and continued toward, or into, the [illegible] clean knife must be used for each lateral incisio [illegible] if not, the knife should be thoroughly wiped and sterilized by flame The soft tissues are then divided by one clean sweep down to the bone after the manner of the old circular method The two flaps thus produced by the combination of the circular and the lateral incisions are retracted and the bone is sawn through at the level previously determined The vessels are ligatured with silkworm gut or catgut, not thread or silk, for fear of sepsis in the wound The flaps are then forcibly pulled down, forming a funnel-shaped cavity in which the muscles are not in apposition This cavity is firmly packed with sufficient gauze wrung out of Wright's hypertonic salt solution or Dakin's fluid so as just to allow the flaps to meet firmly over the packing The flaps are secured in position by three strips of self-adhesive strapping and the ends of the gauze are allowed to project at each corner through the lateral incisions The stump is then covered with a dressing of sterile gauze and a bandage The ordinary rubber drainage tubes, whether large or small, must not be used In some cases but only rarely, a few interrupted sutures of silkworm gut may be inserted to reinforce the strapping, but they should be quite slack

2 **Syphilis of Central Nervous System**—Of the eight cases reported by Robertson, two showed early, and in one slight involvement of the central nervous system within a year of the primary infection Each had received during the secondary period a single injection of salvarsan, followed by maximal doses of mercury by mouth, without, however, preventing the onset and progressive involvement of the central nervous system A single combined treatment by intravenous salvarsan and intraspinal salvarsanized serum in the eighth case sufficed to clear up the leukoplakia on the tongue and convert the pathologic spinal fluid into a normal fluid In one case a progressing nerve deafness was arrested, hearing restored to approximately the normal the eye condition much improved, and the headache and nervousness abolished The general health was also markedly improved, so that he was able to enlist for active service The spinal fluid became negative to the Wassermann reaction The other six cases were all of long duration, and showed various manifestations of the disease In all the general health was markedly improved, and in cases in which headache and nervousness were present they disappeared Shooting pains, present in three cases, were abolished In all but one of the six cases eye changes—usually inequality of pupils—were improved In one case of early tabes dorsalis the atonic bladder recovered and the anesthesia of hands and feet was remarkably improved In seven cases the butyric acid test (Noguchi) for globulin was diminished to a faint reaction, and in one it was entirely abolished The Wassermann reaction became negative in six of the cases

3 **New Ulcerative Dermatomycosis**—The fungus isolated by Castellani belongs to the hyphomycetes or *Fungi imperfecti*, and is of somewhat difficult classification It is proposed to include it in the genus accladium at least temporarily, and call it *Accladium castellanii* The microscopic appearance on culture media (Sabouraud's agar carrot) recalls somewhat the appearance of *Cladosporium herbarum*, with the difference that the colonies are whitish and amber yellow instead of being greenish black The growth consists of many small roundish masses which later on often coalesce covered by spiculated formations consisting of erect straight filaments parallel to each other or at times interlacing These filaments are approximately 2 microns in diameter and carry laterally pseudoconidia of variable shape, cylindriform, piriform, or spherical, attenuated in size at their points of insertion Most of these pseudoconidia are 4 microns long with a breadth of 3 microns These pseudoconidia become detached and then develop by sprouting and mycelial filaments are formed Certain filaments produce spherical chlamydospores arranged in small strings as found in certain fungi of the genus *Fusarium* These small chains of chlamydospores are very frequently terminal, the dimensions being variable—8 to 10 microns

very slow, but it m case ulcers are seen practically all over poisoning in ca on the face, scalp, palms and soles they are have been ers or altogether absent The ulcers are generally sharply defined, roundish or oval with red granulating fundus In certain cases there may be abundant purulent secretion, and the ulcers are often covered by thick yellow crusts Gumma-like nodules and furuncle-like lesions may also be observed Some of the superficial lymph glands are often enlarged The lesions are not as a rule very painful, and there is little or no itching The general condition of the patient is not seriously affected for a long time but he often complains of weakness general discomfort and is unfit to attend to his work Occasionally there is serotine temperature In two cases in which the blood was investigated red blood corpuscles and hemoglobin were slightly below the normal, and in one case there was eosinophilia (5 per cent) The urine did not contain either albumin or sugar The course of the disease is long and if left untreated there is apparently not much tendency to spontaneous cure Potassium iodid should be given in full doses, 20 grains three or four times daily The drug appears to act better if the patient is given a salt-free diet As regards local treatment it is sufficient to keep the ulcers clean by dressing them with weak mercury perchlorid lotion Ointments are badly borne in most cases

5 **Vaccine in Mediastinal Actinomycosis**—Though a radical operation involving rib resection had been successfully performed in Malcolm's case two years before and iodid in maximum doses was swallowed month after month and pound after pound, two sinuses continued to discharge one of which was connected with a nodule on the pericardial surface Treatment was started by weekly subcutaneous injections of 2½ million actino-fragments The dose was gradually increased up to 10 million The latter was an overdose Ultimately 4 or 5 million was found to be an effective dose without bad effects, and this quantity was continued till about fifty doses had been given The discharge soon lessened, the sinuses healed, the nodule in time could not be made out, and a 'fulness' present in the parts disappeared

6 **Exophthalmos of Long Standing Due to Exophthalmic Goiter**—All the other symptoms of exophthalmic goiter had disappeared in Mackinnon's case, but the exophthalmos remained to a marked degree The thyroid was normal in size, colloid appeared rather deficient The two chief abnormal features recognized in microscopic sections of the gland were a marked vascularity and an increase of the glandular tissue at the expense of the colloid The acini varied a good deal in size, and were lined with cubical or columnar cells both being represented in one acinus in many places The cubical cells predominated The cells of columnar shape stained more heavily with hematoxylin and had the appearance of more recently formed elements The thymus was persistent but small The spleen was normal A small accessory spleen was present The pituitary and suprarenal glands showed no macroscopic lesions and were normal in size and texture There was no enlargement of the lymphatics, and the cervical ganglia showed no change The heart was normal and there was no thickening hardening, or dilatation of the blood vessels On removing the supraorbital plates nothing unusual was found Owing to the protrusion of the eyeballs the retro-orbital space was abnormally deep This space was filled with fat Pneumonia was the cause of death

Edinburgh Medical Journal

October XVII No 4

8 Histology of Disseminated Sclerosis J W Dawson —p 229
To be continued
9 Acute Intestinal Obstruction A Miles —p 241
10 Acute Generalized Tuberculosis A F Hewat —p 251
11 Case of Amebic Abscess of Liver H L W Wemyss —p 255

9 **Acute Intestinal Obstruction**—Twenty-four cases of obstruction due to bands in which Miles operated are analyzed In four cases an isolated process of the great omentum had formed an adhesion at its free end and constituted the band which strangulated the bowel In one case the fallopian tube and broad ligament formed the band Only in one case was a Meckel's diverticulum the cause of obstruction The terminal ligament of the diverticulum was attached to the umbilicus In other cases the following bands were found I A short, broad band was found attached at one end over a calcified gland in the mesentery, and at the other to the convex border of the immediately adjacent small intestine II A band sprang from the mesentery and was attached to the distal side of an adjacent coil in such a way that its contraction folded the bowel over on itself and occluded it III A fibrous cord arose from a calcified gland in the mesentery on one side of the bowel and passed circumferentially across to become attached again to the mesentery at a point directly opposite this forming a ring round the intestine, about 3 inches from the ileocecal junction IV A band was attached to the convex border of two adjacent coils of small intestine and an intermediate loop slipped under it and was strangulated V A mesenteric band in addition to ensnaring a loop of small intestine, so dragged on the portion of bowel to which it was attached as to kink it, and so cause a double obstruction VI The loop that happened to pass under a band had its two limbs bound to one another by firm fibrous adhesions which were evidently of long standing VII A week after an appendectomy the abdomen had to be opened to relieve an obstruction of the jejunum due to inflammatory adhesions Subsequent to this it appears that the convex borders of two pieces of small intestine had become adherent by plastic lymph and in course of time had been pushed asunder so that the wall of each was drawn out in the form of a short diverticulum Under the arcade thus formed a loop of bowel slipped and became strangulated VIII Two bands sharing in the production of obstruction, one tag of the free border of the great omentum was adherent to the mesentery of the small intestine over some tuberculous glands, and another to the fundus of the bladder

Journal of Tropical Medicine and Hygiene, London

October 2 XIX No 19

12 Equine and Bovine Streptococci as Causal Agents of Human Infections A J Chalmers and A Marshall —p 225

Lancet, London

October 14 II No 4859

13 John Ward and His Diary D Power —p 665
14 Trench Fever Relapsing Fever Occurring Among British Troops in France and Salonica A F Hurst —p 671
15 Operation of Laryngofissure I Moore —p 675
16 Late Sequelae of Frambesia P Harper —p 678
17 Wound of Portal Vein Operation Death Nine Days Later W H C Romanis —p 679
18 Case of Tonsillitis with Hemorrhagic Adenitis C F Strange —p 679

Medical Journal of Australia, Sydney

September 16 II No 12

19 Resume of Seven Hundred and Sixty Consecutive Midwifery Cases Met with in General Practice P L Hipsley —p 221
20 Conduct of Normal Labor J C Windeyer —p 223
21 Prophylactic Induction in Normal Pelves F Barrington —p 224
22 Herniotomy Under Local Anesthesia D Kelly —p 226
23 Luxatio Erecta of Shoulder Joint E A Falkner —p 227

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24 Incidence of Venereal Disease and Method of Prevention E H Molesworth —p 243
25 Cesarean Section in Eclampsia W C McClelland —p 250
26 Congenital Auricular Fistula H Rischbieth —p 261

Bulletin de l'Académie de Médecine, Paris

September 26 LXXVI No 38 pp 211 226

27 *Syphilis Inherited from Great Grandfather (Syphilis hereditaire d origine paternelle a la troisieme generation) Gaucher —p 213
28 Local and General Reactions after Injection of Antitetanus Serum Bazy —p 216
29 *Cholesterin and Camphor to Mobilize and Reenforce the Natural Defensive Powers (Mise en etat de defense de l organisme infecte Methode nouvelle Actions antihemolytique et anti toxique. Applications pratiques aux grands blesses de guerre) F Barbary —p 221
30 Hypochlorite Sterilization of the Hands (Procede de desinfection des mains par les hypochlorites terreux — magnesie et chaux) Dubard —p 223

27 **"To the Fourth Generation"**—Gaucher is the family physician to an apparently healthy young couple, both free from acquired venereal disease, whose three children present manifestations of inherited syphilis of severe type One is an idiot As Gaucher had been the physician also of the grandfather, he recalled certain manifestations of inherited syphilis in this man who had never acquired any venereal disease At the time, Gaucher confesses, he did not recognize the manifestations as the work of inherited syphilis—in those days less was known about inherited syphilis than now, and the total freedom from acquired venereal disease misled him But this man's father, the great-grandfather of the three children, died in early manhood from syphilitic paraplegia

29 **To Reenforce the Natural Means of Defense**—Barbary has been applying in practice the points learned in recent research on lipoids in general and on cholesterin in particular The latter seems to stimulate the production of antibodies By injecting cholesterin directly and injecting another substance which stimulates the production of cholesterin, the cholesterin content of the blood rapidly increases and the body repels or throws off infection and recuperates—all much earlier and more effectually than is otherwise the case At least this has been Barbary's constant experience with the sick and severely wounded In his hospital, at Nice, there have only been four deaths among the 767 wounded and nine among the 797 sick during the last twenty-one months and the deaths among the wounded were explained by other reasons He uses a mixture of 0 2 gm cholesterin, 0 5 gm camphor and 0 0005 gm strychnin sulphate in 5 gm olive oil, washed in alcohol Chauffard has demonstrated that serious infections are always accompanied by a special hypocholesterinemia while immunization processes show an exceptionally high cholesterin content in the blood

Paris Médical

September 30 VI No 40 pp 273 288

31 Filiform Drainage for Diffuse Peritonitis (Nouveau mode de drainage de la peritonite generalisee) H Chaput —p 273
32 Factitious Chronic Picric Acid Jaundice (Les icteres picriques chroniques) P L Marie —p 277
33 Symptoms and Diagnosis of Deafness from Explosion Nearby (Surdites par obusite) R Ranjard —p 279
34 Device for Convenient Immobilization of Joints (Appareils metalliques a arc pour l'immobilisation provisoire des plaies articulaires et des fractures juxta articulaires du membre inferieur) L Courty —p 284
35 Variable Tendon Reflexes in Syphilitic (Reflexes tendineux variables seule manifestation clinique objective d un etat asthenique grave) Dumolard Rebierre and Quellien —p 286

Presse Médicale, Paris

September 28 XXIV No 54 pp 429 436

36 Factitious Picric Acid Jaundice (Pathogenie diagnostic chimique et caracteres urologiques des icteres par ingestion d acide picrique) M Brule M Javillier and B Baeckeroot —p 429
37 Gaseous Complications of War Wounds N Lapeyre —p 431

Revue Médicale de la Suisse Romande, Geneva

September XXXVI No 9 pp 537 624

38 *The Skin Tuberculin Test in Schoolchildren (A propos du Pirquet dans les ecoles de Lausanne) Weith —p 537
39 *Roentgenotherapy of Uterine Fibromas and Hemorrhagic Trouble Beuttner —p 553
40 *Diagnosis and Treatment of Perforated Gastric and Duodenal Ulcers G Patry —p 574
41 *Brazilian Trypanosomiasis Chagas Disease (La trypanosomiase bresilienne et son rapport avec le corps thyroide) E Novaes —p 592

38 **The Skin Tuberculin Test Not for the School**—The Journal summarized recently Jeanneret s assertions that the Pirquet test should be applied systematically to schoolchildren Weith here takes issue with him, declaring that the Pirquet technic is not always absolutely harmless Doganoff and Slatineau observed such pronounced general reactions and subjective phenomena that the latter has abandoned the Pirquet for the ophthalmoreaction On the other hand, the response to the test is far from being always conclusive, especially in children Muller found tuberculous lesions at necropsy in twelve out of seventy-seven with negative Pirquet during life In short, Weith declares, we can assume to start with that now all children are infected with tuberculosis, and that all weakly children are nonresistant and hence should be built up into strong health Efforts should be directed to prevent the children's getting infected in the first place The local authorities should enforce regulations to ensure hygiene in the community The school medical inspector should refrain from abusing his authority The Pirquet test should be left to hospital and private practice In conclusion Weith comments on the prevalence of bad breathing habits So few children and even adults take in enough air into their lungs Weakly children in particular do not expand their lungs enough

39 **Roentgenotherapy of Uterine Fibromas, etc**—Beuttner reports in detail thirty-two cases of fibromas given systematic roentgenotherapy, and twelve cases of hemorrhagic uterine trouble His conclusions are to the effect that operative measures are preferable when the patient has to be cured as soon as possible and with the least expense When an operation is impracticable for any cause, Roentgen exposures are a precious resource He aims to restore physiologic conditions with uterine affections, not to arrest menstruation definitely, and he regards the results obtained as very satisfactory

40 **Perforated Gastric and Duodenal Ulcer**—Patry remarks that the outcome depends on the physician who suspects a perforation rather than on the surgeon who operates for it Among his twenty-seven cases of perforation, one developed in the hospital under his eyes, and he was impressed with the difference between the clinical picture presented and the descriptions of such in the textbooks He was impressed in this and other cases with the pronounced remission of symptoms after the first phase, the shock, which may last from a few minutes to two hours Then the pain becomes bearable, the patient feels and looks much better, and the pulse grows slower and stronger This deceptive improvement may last for two or three hours This is the time for operation, although it may be hard to convince the patient of the necessity for it as he thinks the trouble is waning One great advantage of operating during this early phase of remission is that we thus take advantage of the reflex spasmodic contraction of the pylorus which occurs from the irritation but seldom lasts more than four or five hours at most Then comes the phase of peritonitis Perforation of a gastric or duodenal ulcer presents a more sudden and dramatic picture than appendicitis The general condition is more serious, the pulse weaker and faster, and respiration becomes shallow and rapid, of the superior costal type, the patient trying to spare his abdomen all exertion The muscle is woody only above the umbilicus as a rule, and the pains spread upward instead of downward as with appendicitis There is seldom fever with perforation at first, while it usually accompanies appendicitis Patry denounces further the teaching that perforation may occur like a bolt of lightning from a clear sky, there is always a history of stomach or duodenal trouble in such cases It may have been misinterpreted, as when a patient describes "hunger pain" and cites it as a manifestation of his "fine appetite," excluding all idea of stomach trouble

There were only two women among Patry's twenty-seven cases The perforation occurs usually during the period of gastric digestion, very rarely during fasting The perforation may become walled off and the peritonitis remain strictly localized, spontaneously subsiding Patry is convinced that these early plugged perforations are the explanation for the extensive adhesions found so often in the course of operations for old "recurring' ulcers There may be sudden and violent cramps in the stomach, weakening the patient for a few days, but then there is no further trouble as the perforation ceases to be permeable

The shock with perforation of an ulcer is due to the sudden irritation of the peritoneum from the stomach fluids The syncope and changes in the pulse are the result of a reflex from the peritoneum During the first five hours the ulcer is the main thing the peritonitis can be disregarded as a rule After the fifth hour the peritonitis must be combated and the ulcer left to be attended to later, six weeks three months later perhaps Treatment for perforated gastric or duodenal ulcer is thus the same as for appendicitis, only that the perforated ulcer causes a graver syndrome which develops more rapidly and demands a more serious operation, and the physician has less time to study the case

41 **Chagas' Brazilian Trypanosomiasis**—Novaes has been studying Chagas' "parasitic thyroiditis," as the latter designated it at first, and gives here the results of much experimental work The parasite has been named the *Schizotrypanum cruzi* Two colored plates show its growth and habitat in the blood It induces in adults hypertrophy of the thyroid with myxedema, melanoderma and muscular weakness, in children the course is more acute, with fever, swelling of glands and hypertrophy of the thyroid, entailing symptoms from thyroid insufficiency and sometimes from meningeal irritation In the chronic form there may also be a syndrome with heart or nervous symptoms predominating The mind does not seem to be affected with goiter from this cause Vaccines made from the parasite have not to date proved effectual The parasites locate by preference in the skeletal striated muscle, but may invade glandular, adipose and connective tissue, heart, spleen, etc Most of the cells of the organism seem to bear invasion by the parasites without much harm, but suffer from their toxins These seem to affect the thyroid predominantly, but the genital glands and suprarenals are liable to suffer as well as the nervous system from the presence of the parasites in the brain Their penetration into the heart is responsible for most of the deaths from Chagas' disease The intermediate host is a bug called 'barber" by the natives as it bites mostly about the face

Correspondenz-Blatt fur Schweizer Aerzte, Basel

September 30 XLVI No 40 pp 1249 1280

42 *Hysteria from Otologic and Rhinologic Standpoint (Oto rhinologische Beitrage zur Kenntnis der Hysterie) F Siebenmann—p 1249
43 Malignant Pustule Subsides under Neosalvarsan F Heim—p 1258
44 Measurement of Radium Activity (Radiumskizzen I) E Sommer—p 1262
45 Nonfatal Lightning Accident. (Militarunfall durch Blitzschlag) Buhler and Gisler—p 1264

42 **Hysteria from Otologic-Rhinologic Standpoint**—Siebenmann mentions briefly a number of cases in which the patients tried to deceive the physician by simulating or aggravating ear and nose troubles In Chavanne's imposing compilation of cases of this kind, in 1901, males predominated Siebenmann warns of the prevalence of what he calls *furor operativus subjectivus* These patients are generally girls or young women who have been operated on once or have some chronic ear trouble or have watched some one who had In one such case the young woman succeeded in getting fourteen operations performed, including two mastoid operations Differentiation is most difficult when the manifestations of the hysteria are restricted to the ear We must be on the alert when the objective findings do not seem to justify the intensity of the subjective symptoms He is convinced that we are deceived into doing needless operations on sound accessory sinuses more often than the literature records All are agreed that when the hysteric nature of the trouble is learned, the patient should be handed over to the psychiatrist Cold douches and other brusque methods may exceptionally cure, but sham operations should not be attempted He describes in detail the case of a young woman who had otitis in childhood and later simulated gastric ulcer and pulmonary tuberculosis and had operations for gastric trouble and three mastoid operations A second young woman had chronic otitis media on one side and secured seven operations on the mastoid or accessory sinuses The consequence is deafness on that side and paralysis of the face and tongue from operative injury Both these women became addicted to morphin In a third case a boy of 12 became totally deaf after the explosion of a bomb from an aeroplané He was also unable to speak and presented a number of sensory and vasomotor cerebellar symptoms This condition persisted rebellious to all measures for eight months A complete change of environment—to the children's ward of a hospital—and local treatment of a catarrhal affection of an eustachian tube almost at once restored conditions to clinically normal He did not improve when placed in a private room at the hospital

Gazzetta degli Ospedali e delle Cliniche, Milan

September 28 XXXVII, No 78, pp 1217 1232

46 *Cure of Tuberculous Epididymitis under Iodin Iodid Treatment (Caso di tubercolosi dell epididimo guarito con la cura alla Durante) A Sofia—p 1229

46 **Iodin Treatment of Tuberculous Epididymitis**—In the case reported the solution of iodin and potassium iodid was injected directly into the fistula every few days and a subcutaneous injection made every day—all according to Durante's technic The patient was thus given eighteen local and over 300 subcutaneous injections When seen again six months later the young man was apparently in a most satisfactory, well nourished condition, the mucous membranes pink and the fistula healed The bunches on the epididymis were soft, not tender, and reduced in size and number

Policlinico, Rome

September XXIII Medical Section No 9 pp 313 344

47 *Auscultation of Whispered Words in Diagnosis of Pleural Effusions (Il fenomeno del Baccelli) G Viola—p 313
48 *Pernicious Anemia A Roccavilla—p 329 To be continued

Surgical Section No 9 pp 257 288

49 Treatment of Fracture of the Clavicle C Ghillini—p 257
50 *Influence of Trauma and of Operative Procedures on Manifestations of Malaria I di Pace—p 260 First instalment in No 5 p 142
51 The Urochromogen Permanganate Reaction in the Urine Not Specific for Tuberculosis (La reazione di Moritz Weiss in rapporto alla pratica chirurgica) C R Belgrano—p 276
52 Catheterization of the Ureters E Pirondini—p 284 To be continued

47 **Transmission of Sounds Through Pleural Effusions**—Viola's study of this subject has confirmed the fact that when whispered words can be auscultated the effusion is fluid When some of the letters seem to be dropped out of the words the effusion is somewhat purulent As less and less of the words is heard, but the bronchial murmur persists, the effusion is more and more purulent When nothing can be heard no decisive conclusions can be drawn This sign, known as Baccelli's phenomenon, assumes most importance after pectoriloquy of the whispered voice has reached its limit

48 **Pernicious Anemia**—Four cases of pernicious anemia of the classic type are reported with the necropsy findings In one the Wassermann reaction was positive although Roccavilla is confident that syphilis could be excluded He calls attention further to the burning heat and dryness of the lips, tongue and throat of which all the patients complained as the first sign of trouble The complexion assumed a lemon yellow tint with greenish reflections in all but one of the patients, and in this case the anemia was symptomatic

50 **Influence of Trauma on Manifestations of Malaria**—Di Pace relates some cases of apparently entirely cured malaria in which, months and years later, after an operation or severe trauma, the malaria flared up again in severe form It must be that the malarial parasite can lie latent in the organism in some of its known forms or in some yet unobserved form, capable of reproducing itself under certain exceptional conditions He discusses recent literature on the subject and declares his conviction that a radical cure of malaria can never be counted on

Riforma Medica, Naples

XXXII No 26 pp 697 724

53 Pathologic Anatomy of Malta Fever (Febbre melitense) B Lunghetti—p 697

No 27 pp 725 752

54 Hypochlorous Acid in Treatment of War Wounds (Asepsi ed antisepsi in chirurgia di guerra) N Giannettasio—p 726 Commenced in No 25—p 676

No 28 pp 753 780

55 *Fatal Erythema in Woman (Eritema idiopatico mortale) P F Arullani—p 753
56 Psychic Mutism in Soldiers on Active Service (Alcune considerazioni attorno al mutismo psichico nei militari alla sua genesi emozionale e commozionale) C Goria—p 756 Commenced in No 27—p 725

55 **Fatal Erythema with Exudation**—Arullani's patient was an otherwise healthy young woman with an ordinary erythema which had commenced three years before on the face It subsided under local measures but returned nearly three years later, very severe, with certain characteristics of eczema and was soon accompanied by uremia from acute parenchymatous nephritis rapidly fatal He is convinced that the kidney trouble was secondary to the exacerbation of the skin disease There was nothing to suggest syphilis, rheumatism or other cause Lewin had ten deaths in his seventy cases of erythema with exudation but the erythema was secondary to visceral trouble responsible for the fatal outcome Under local treatment with petrolatum with from 5 to 10 per cent oil of cade, the dermatosis in Arullani's case was apparently retrogressing when the fatal uremia developed

Cronica Medica, Lima, Peru

XXVIII No 1 pp 1 32

57 Mossy Foot (Pie musgoso) J Arce —p 6
58 Therapeutic Artificial Pneumothorax (Metodo de Forlanini y tuberculosis pulmonar) A Corvetto —p 20

No 2 pp 33 64

59 *The Remissions in Renal Tuberculosis (Los periodos de mejoria en la tuberculosis renal) C M Macedo —p 33
60 The Oil Beetles of Peru and Therapeutic Action of Their Oil (Estudio de los pseudomeloides de Peru y de la accion terapeutica de la pseudomeloidina) E Escomel —p 49

No 3 pp 65 96

61 Camphor for Local Application in Smallpox (Estudio de algunos tratamientos propuestos en la viruela Exposicion de un nuevo metodo) T Taboada —p 71
62 Hemorrhagic Purpura of Malarial Origin E Odriozola —p 75
63 Indications and Technic for Prostatectomy M V Matos —p 79 Continued

59 **The Waves of Improvement in Renal Tuberculosis**—Macedo has followed to date the history of three patients with a tuberculous process in the kidney who refused to permit operative treatment and their kidney trouble seemed to pass into a latent phase The secondary bladder changes also subsided more or less completely The phenolsulphonephthalein test and Ambard's uremic constant, however, show that the functioning of the kidney has not improved The detailed findings from clinical examination repeated at various times during the year are given for each time in each case The symptoms which have subsided are the pain in the lumbar region, abnormal frequency of micturition and hematuria The kidney proper is not really sensitive and the local pain is from stretching of the capsule etc As the kidney shrivels the pain subsides On the other hand the polyuria persists constantly and with it the albuminuria and pyuria the latter minute but constant and tubercle bacilli are still found in the urine These findings show that the improvement with advanced renal tuberculosis is deceptive When a tuberculous process in the kidney has reached the 'open" stage, we can never count on a spontaneous cure or on recovery under medical measures alone

Semana Medica, Buenos Aires

August 17 XXIII No 33 pp 151 172

64 The Electron Conception of Values (El concepto electronico de la valencia) P J Mesigos —p 160
65 Auscultation of Middle Ear During Swallowing (Ruido auricular) A S Lagomarsino —p 164
66 Prophylaxis and Treatment of Syphilis in Maternities E Mazzini —p 165

August 24 No 34 pp 173 194

67 Vaccine Treatment of Diphtheria (Vacuna antidifterica Lemos) C Ponce —p 173
68 Official Systematization of Modern Medicine The Practitioner of the Future (La sistematizacion oficial de la medicina moderna) F Otero —p 174
69 History of Public and Social Hygiene in Argentina I (Puericultura en la Argentina 1879 1910) E R Coni —p 176

Mitteilungen a d med Fak, Kyushu Univ, Japan

II pp 1 280 German Ed •Last indexed Feb 27 1915 p 783

70 *Common Trychostrongylus Intestinal Parasite in Japan (Ueber Trichostorongylus orientalis Jimbo) K Kitamura —p 1
71 *Pancreatitis Caused by Ascarides Four Cases (Klinisches und Experimentelles uber die Pankreatitis verminosa und Pankreasnekrose) G Izumi —p 61
72 *Influence of the Food on the Composition of the Bile (Einfluss der Nahrung auf die Zusammensetzung der Galle) R Toida —p 153
73 Can the Bleeding Polypus Grow Out of the Nasal Turbinal? T Matsui —p 175
74 *Chorio Epithelioma (Zur onkologischen Kenntnis der sogen heterotopischen Chorionepitheliome) S Yasuda —p 181
75 *End Results of Operative Treatment of Gastric Cancer (Resultate der operativen Behandlung des Magenkrebses, insbes uber Dauerheilung) H Miyake —p 203

70 **Trichostrongylus in Japan**—Five double or triple page plates accompany this study of what Kitamura thinks is a new species of intestinal parasite The ova are like those of the hookworm, but larger The larvae were able to invade the mouse through its skin, but the parasite seems to have but little pathologic significance except from the bulk of large numbers

71 **Ascaris Pancreatitis**—Izumi relates that he has not been able to find any records in the literature of cases of chronic pancreatitis of parasitic origin aside from a case published in Japan and a case in a cat, reported by Ordway But he has encountered four cases in which persisting pains in the pancreas region and other symptoms compelled removal of the pancreas and ascaris ova were found embedded in a circumscribed inflammatory process In one case also a long female ascaris was found in the pancreatic duct and tail of the pancreas The stomach liver and biliary ducts were apparently normal in each case Izumi reports further experiments on nine dogs injected with an emulsion of ascaris ova into the pancreas with control injections of isotonic salt solution The findings confirm those in the clinical cases showing that irritation from immigrated ascaris eggs is liable to set up chronic circumscribed pancreatitis No fat tissue necrosis was found in the animals, although it was pronounced in the clinical cases This suggested further research on the causation of acute hemorrhagic pancreatitis and the details of experiments on ninety-six other dogs are given showing the effect on the pancreas of interference with its circulation of obstruction of the outlet of injected duodenal content, injected olive oil, steapsin, hydrochloric acid sterile or infected bile, blood and serum trypsin, pancreatic juice or extract of duodenal mucosa A bibliography of 113 titles is appended and four plates show some of the microscopic findings The data all confirm the view that the trypsinogen element of the pancreatic juice is responsible for acute hemorrhagic pancreatitis, but it first has to be activated and an extract of duodenal mucosa is the most potent activator All other factors consequently are of minor importance in the genesis of necrosis of the pancreas

72 **Influence of the Food on the Composition of the Bile**—Toida's five dogs with fistula into the gallbladder had greatly increased proportions of the bile salts cholesterin and fat in the bile when they were fed meat and fat foods The mucin the pigments and the inorganic salts did not seem to be much influenced by changes in diet

74 **Ectopic Chorio-Epithelioma**—Yasuda reports that the cadaver of a woman of 28 showed a primary cancer in the small intestine with multiple metastases in liver, lung, kidney brain and mesenteric glands Several years had elapsed since the woman's last childbirth, but the microscope revealed that the malignant growth was a chorio-epithelioma He describes further the cadaver of a man of 54 dying of cancer in the pleura with multiple metastases The microscopic findings closely resembled those of a chorio-epithelioma but he thinks that such cases, in males and virgins, should be called pseudochorio-epithelioma

75 **Ultimate Outcome of Operations for Gastric Cancer**—Miyake gives the details and history to date of 175 patients with gastric cancer given operative treatment between 1902 and April, 1914 During this period 411 operations were done, no operation was attempted in thirty-two other cases This article thus is based on 443 cases In twenty-eight of the cases other members of the family had had gastric cancer In only seven cases was there a reliable history of a preexisting ulcer Of the 175 patients treated with resection fifty-eight succumbed to the effects of the operation a mortality of 33 1 per cent He cites figures from twenty eight

clinics regarding 1,266 resections for gastric cancer, with a mortality range from 66 6 to 8 per cent, the average being 32 8 per cent—not much higher than the figures at his hospital The technic and various problems of gastric cancer are discussed in detail and the present condition of the 117 surviving patients is tabulated fifty succumbed to recurrence of the cancer after intervals of a few months to five years the average survival being nearly nineteen months Nearly 15 per cent are in good health to date, more than three years since the resection Analysis of these cases shows that the duration of the malignant disease and the histologic nature of the tumor are not of as much moment for the permanent cure as the absence of glandular metastases and tough adhesions, and the microscopic evidence of an early phase of the malignant growth Exploratory laparotomy seems to be the only certain means for an early diagnosis

Russkiy Vrach, Petrograd

XV No 33 pp 769 792

76 *Familial Progressive Amaurotic Idiocy Two Cases (2 sluchaya boliezni Tay Sachs a) I A Shabad —p 775
77 Experimental Research on the Reaction of the Vessels of the Isolated Spleen to Certain Hormones (K voprosu o reaktsie sosudov obosoblennoi—isolirovannoi—selezenki po otnosheniu k niekotorim hormonam) A A Grube —p 778
78 Experiences with Antityphoid Vaccination at Vladivostok Marine Hospital (Predokhranitelniya protivutiphozniya privivki) A A Shishlo —p 782

76 **Familial Amaurotic Idiocy**—Shabad states that about twenty-nine cases of Tay-Sachs' disease have been published in Russia and he adds two typical cases to the list The children developed apparently normal until the ages of 6 and 9 months and then became absolutely lethargic, idiotic and blind, with muscles so lax that if the child was made to sit up, its head and back bent over until the face barely escaped touching the horizontal knees Both died about the age of 2 from intercurrent disease

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

September 30 II No 14 pp 1173 1268

79 *Osteochondromatosis of the Joint Capsule (Osteochrondromatose van de gewrichtskapsel) J W Kopp —p 1175
80 *Goiter and Melancholia (Struma en depressie) B D G Kappenburg —p 1187
81 *Investigation of Visual Field in Operative Cases of Glaucoma (Gezichtsveldonderzoek en glaucoomoperatie) G J Schoute —p 1200
82 The Crossed Finger Sensory Delusion (Het tastzinbedrog van Aristoteles) T Wassenaar —p 1208
83 Actinomycosis of the Lacrimal Duct Three Cases (Drie gevallen van actinomycose der traanwegen) W Koster —p 1213

79 **Osteochrondromatosis of the Joint Capsule**—Kopp has been able to find records of only twelve cases of this affection in the literature and yet he has encountered three cases in his own practice at Rotterdam The patients were men of 24 and 39 and a woman of 77 One knee in one man and both knees in the other and in the woman were affected The trouble began very insidiously and slowly developed in the course of years without much pain or limping but suddenly there were severe symptoms as from incarceration of a loose body in the joint When the joint is opened a number of hard movable bodies are found scraps of cartilage tissue which apparently have developed from the capsule the bone proper being entirely normal in aspect and no signs of an infectious process having been found in these cases Opening the joint and removing the loose bodies put an end to the trouble for a time but the former status soon returned, and arthrectomy likewise did not ward off recurrence Resection offers the best prospects and this Kopp commends as the rational treatment He applied it to the older man and with eminently satisfactory results for twenty months to date but now the other knee seems to be developing the same process The younger man is a medical student and roentgenograms at different intervals during the three years show that the process is progressing but he refuses operative treatment A number of hard freely movable, loose bodies can be palpated in the right knee but there is little pain except when one of the free bodies gets caught between the parts of the joint There is increasing limitation of the movements of the joint The roentgenograms accompanying the article show the proliferation of the capsule but the bones of the joint seem entirely normal No measures except surgical offer the least prospect of success In one case the loose body seems to have broken through the capsule This happened also in Lexer's case No instance is known of the trouble proving malignant at any time Although the proliferation of capsule tissue may eventually proceed outside the capsule, it does not spread by infiltration but by pushing other tissues aside

80 **Goiter and Depressive Conditions**—Kappenburg states that 20 per cent of the fifty-six persons with goiter at the Utrecht Hospital presented more or less pronounced mental impairment while only 4 4 per cent among 437 other inmates showed anything of the kind Among the 20 per cent nearly all were of the manic-depressive or melancholia types of psychosis, while this was true of only 1 1 per cent among the others The thyroid gland seems to be affected more than others by emotional influences It is the *glande de l emotion* as it has been called He compares the various theories as to the pathogenic influence of the thyroid and its connection with psychic depression One thing is certain he declares, namely, that such an influence exists, and the figures he presents sustain this assumption

81 **The Visual Field as Guide for Operating in Glaucoma**—Schoute explains with illustrations how the changes in the visual field with glaucoma indicate the special operative measures required in the individual case

Hospitalstidende, Copenhagen

October 4 LIX No 40 pp 965 988

84 *Pains in the Feet (Om Smerter i Fødderne) C Otto Commenced in No 38 —p 913

84 **Pains in the Feet**—Otto remarks that the weight of the body is an ever increasing burden which the feet have to bear from the cradle to the grave, often exposed to cold and damp and other unfavorable conditions impeding circulation and nourishment But traumatism is the main factor in the pathology of the feet Not single trauma, but injury from long continued compression and weight bearing This reduces their resisting power, and may entail insufficiency even when no objective signs of it are evident But the result is always the same, complaints of tired aching, tender feet, stiffness and pains The pains are often referred to some point apart from their actual source, so that it is necessary to study the whole extremity as a static unit and examine it throughout To compensate or relieve pain at some point a position may be assumed which elicits pain at another point With genu valgum for instance, the foot is held in a varus position while there is a compensating flatfoot with genu varum The location of callouses may aid in the diagnosis of static disturbances as he describes in detail especially with a tendency to pes valgus He discusses in turn the various causes for pain in the heel region in the middle of the foot and in the anterior portion with roentgenograms of typical examples A tendency to valgus or deforming arthritis may induce pain in the heel region, both are common he says and are liable to be misunderstood Inadequate nourishment of the foot is undoubtedly a factor in the development of static flatfoot The inadequately nourished muscles and ligaments are unable to do their work properly and flatfoot disturbances ensue Otto emphasizes that flatfoot is brought on more by standing than by walking Muscles require action to keep in normal condition Standing with its incessant pressure on the soles of the feet impedes the influx of arterial blood and the outflow of venous and the insufficiently nourished muscles and ligaments stretch

After discussing in detail the numerous traumatic and inflammatory changes in the foot which may be responsible for pain Otto reaffirms that flatfoot must be incriminated in 95 per cent. of the cases in which the pain subsides during rest Flatfoot in children usually manifests itself suddenly after some overexertion, and the pains and contracture are extreme In older persons it develops more gradually and the pains may be vague and localized in the buttocks back shoulder, gastrocnemius, inner side of the knee or elsewhere, and are often mistaken for gout or chlorosis He has the patient stand on a chair and he examines the feet from the rear The heel is inclined to pronation The internal malleolus is unduly prominent, while the external is scarcely perceptible, so that the ankle looks flattened The Achilles tendon forms an open angle The head of the astragalus is very prominent, as also the tuberosity of the scaphoid The whole presents a characteristic outline and the diagnosis is confirmed by the tenderness back of the tuberosity of the scaphoid, over the triangular ligament, and in front of the external malleolus

Norsk Magazin for Lægevidenskaben, Christiania

October LXXVII No 10 pp 1253 1396

85 *Experimental Study of the Functions of the Spleen (Til studiet av miltens funktion) A Brinchmann —p 1253

86 *Infant Mortality in Homes Where There is Tuberculosis (Spæd barn i tuberkuløse familier i Kristiania) Y Ustvedt —p 1301

87 *Improvement under Organotherapy of Pituitary Tumor (Ft til fælde av hypofysetumor behandlet med organoterapi) V Magnus —p 1319

88 Emetin in Treatment of Dysentery V Vogt (Yi yang China) —p 1327

89 *Fracture of Transverse Process of Lumbar Vertebra (Om fraktur av lændehvirvlernes tvertagger) S Widerøe —p 1339

85 **Experimental Research on the Functions of the Spleen**—Brinchmann tabulates the blood findings and the changes in the pulse, etc after splenectomy, with and without treatment with spleen extract The work was done on twenty-four rabbits and nineteen guinea-pigs One of the main questions he sought to answer was whether any evidence could be discovered indicating that the spleen regulates the functioning of the red bone marrow or of the lymphatic apparatus The article is to be continued

86 **Infant Mortality in Families Where There is Tuberculosis**—Ustvedt has been compiling data in this line during the last five years at Christiania When such a record has been continued for twenty years, tracing the later fate of the infants born in these families, unquestionably valuable lessons can be deduced from it His material includes 480 infants born in families where there was one or more members with tuberculosis in a contagious stage An average of 19 2 per cent of the infants died within the first year of life while the average infant mortality in the city at large was 10 8 per cent A number of tables are given for comparison of various data They testify anew among other things to the dire influence of tuberculosis in the mother and of bottle feeding Of the 19 2 per cent that died within the first year, 40 per cent had a tuberculous mother and of the 334 breast fed children only 10 5 per cent died while 28 per cent of the 128 bottle fed did not live through the first year Only 37 1 per cent of the infants died of actual tuberculosis among the 124 that died during the five years in question He comments that these figures teach nothing new but they emphasize anew the vital importance of removing infants at once from tuberculosis in the environment, and especially from a tuberculous mother Such statistical works as this can be utilized to educate the parents to the necessity for sending the infant out of the menacing environment The tables show that when the mother had tuberculosis the infant s danger was the greatest, whether it was bottle or breast fed

87 **Tumor in Pituitary Body Treated with Pituitary Extract**—Magnus patient was a man of 29 who for several months had suffered from headaches and other symptoms of a tumor in the pituitary body For the last three months he had been blind vision being lost first in one eye There was some improvement under a decompressive trephining operation followed by Roentgen exposures Then a pituitary extract was given systematically by subcutaneous injection and the tumor evidently retrogressed under it to some extent as vision returned To restore sight to a blind man even for a few months is certainly encouraging The man refused operative measures and the condition finally grew gradually worse again

89 **Fracture of Transverse Process of Lumbar Vertebrae**—Widerøe tabulates the details of thirty-five cases of this kind on record and two from his own practice In his cases the fracture was indirect, one workingman of 40 slipping on one leg in alighting from a car The third vertebra was the one affected, and the man was incapacitated for eighteen months and was accused of simulating or exaggerating the trouble of which he complained When there are complaints of vague pains in the lower part of the back, for which no organic cause can be detected, the possibility of fracture of one of the transverse processes must be borne in mind In the thirty-five cases in the literature the trouble was almost invariably ascribed to rheumatism, lumbago or sprain Payr was the first to diagnose it in the living subject (1907) with the aid of the Roentgen rays

There is always considerable tenderness at the point of the recent fracture, to one side of the median line, and the patient holds the region or the whole spine stiff and moves it as little as possible, with more or less scoliosis toward the sound side Bending over to the sound side is particularly painful When it is the transverse process of the first lumbar vertebra that is fractured, deep breathing elicits pain If the fifth vertebra is involved, there is severe pain in bending over backward *The retroflexion squeezes the fractured* bone between the crest of the ilium and the fifth vertebra On the other hand, bending over backward does not cause this severe pain if the process above is the one that is injured The contraction of the muscles in the region and extravasation of blood are liable to cause swelling, but there is no deformity of the spine and no signs of pressure on the cord

Roentgen examination may be misleading in some cases, as the psoas may overlap the first and second processes or a concretion in the kidney may prove deceptive The transverse process casts but a small shadow at best and there is no typical fracture dislocation

Ugeskrift for Læger, Copenhagen

September 21 LXXVIII No 38 pp 1609 1654

90 *Splenectomy (Om Miltekssttirpation) J Schou —p 1609

91 The Wassermann Reaction Is Not Infallible (Gør Wassermann Reaktionen mest Skade eller Gavn?) B Pontoppidan —p 1622

90 **Splenectomy**—A good review of the history of splenectomy is given by Schou with the experiences with it in various lands The first splenectomy dates from 1549 or 1581 but the first time the spleen was removed on account of malaria was in 1855 Kopylow in 1913 had compiled 201 cases in this category, with a mortality of 25 per cent, but admits that the splenectomy is only palliative Quite a number of persons have been restored to clinical health for a long time by removal of the tuberculous spleen, and Hoffmann has reported good results after removal of the spleen enlarged by a syphilitic process, rebellious to other measures Splenectomy has been practically abandoned as treatment for leukemia except when local symptoms call for it, and it seems to have proved disastrous in the few cases in which it was done for polycythemia But in Banti's disease it has proved its usefulness, even although we do not accept this syndrome as a morbid entity Splenopexy has also answered the purpose here, according to Schiassi and Rossi Schou thinks the only explanation possible for this is that the spleen does not functionate as well after the fixation and hence does not produce so much toxins Rovsing found in a case of apparently Banti's disease that there were no signs of fibrosis in the spleen although it weighed 4 kg Necropsy three months after the splenectomy revealed a gangrenous ulcer in the cardial part of the stomach, that had involved the vessels communicating with the spleen Schou splenectomized a woman of 37 who came to the hospital with the diagnosis of tumor of the kidney She had been having severe pains in the upper abdomen with other symptoms suggesting Banti s disease The spleen weighed 800 gm , it showed no fibrous changes but rather changes suggesting incipient leukemia or pseudoleukemia A month later the reds numbered 4,000 000, the whites 17 000 (about twice the previous figure), and a year later the blood picture and general health seemed to be approximately normal